MINOR MALADIES

AND

THEIR TREATMENT

BY

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PREFACE TO FIFTH EDITION

The present edition has been carefully revised. The section on Diet has been completely rewritten in order to emphasize the importance of the vitamines. The chapter on the Endocrines has also been practically rewritten. In both these departments the details of our knowledge are advancing with such rapidity that no small volume can be expected to keep pace with them. I trust, however, that the foundations are well and truly laid. The superstructure I leave to the curiosity and industry of the reader.

L. W.

August 1923.

PREFACE TO FOURTH EDITION

ALL medical works are egotistical either furtively or frankly If the matter is not coloured by the author's experience if it be not presented in the form in which it emerges from the mill of his own brain the result is a compilation which though it may have some value in classifying facts must nevertheless always fail in the more important direction of suggesting ideas Orthodoxy is an easy comforting thing but it is very confining Heterodoxy which in medicine is synonymous with progress is a difficult and dangerous thing but it is very interesting often it is even amusing This book is entirely egotistical, and it is in many respects heterodox. It was first published in 1900 in each succeeding edition very considerable alterations have been introduced the present one embodies changes greater in number and more considerable in importance than any of the others The section on Constipation has been entirely rewritten the chapter on Change of Air has disappeared to be replaced by one on Minor Glandular Insufficiencies and a small chapter on Old Age has been added.

When I was first qualified I went into general practice. I soon found that though moderately well equipped in the diagnosis and treatment of diseases which I seldom encountered, I was disconcertingly ignorant in those matters about which I was most frequently consulted Pneumonia I knew and Rheumatic Fever and Typhoid I was so well acquainted with Phthisis that I confidently recognized it in every trivial cough and, so well versed was I in heart-murmurs that I was prepared to discover them and treat them—with a combination of digitalis and words of serious warning—even when they had no real significance With knowledge concerning Tabes Tumours and Trematodes I was full to overflowing but I soon realized that I knew very little about a common Cold, less about ordinary Indigestion, and nothing at all about the rheumatic conditions. My knowledge of the subject of Personal Hygiene consisted in attributing to flannel all kinds of virtues and to fresh air all manner of vices In this dilemma I searched for a book which would lighten my darkness but I found it not I then determined that if time and circumstance should ever give me the opportunity of writing such a book those of my juniors who found themselves in the same predicament should not want for such help as I might be able to afford them. The opportunity came about twelve years later when I forsook the drive of a busy general practice for the comparative calm of consulting work.

Such of my experiences as I deemed of value in this connection (many of them were gained by sitting at the feet of elderly practitioners) first materialized in the form of some lectures and demon strations which I gave at the Medical Graduates College and Polyclinic in 1904 These were after wards published chiefly in the *Clinical Journal* and the *Medical Press and Circular* When they were being put into book form they were supplemented by matter which had been incor porated in articles which had appeared in *The Lancet The Practitioner* and other periodicals. In each fresh edition this process of laying under contribution portions of my writings which had appeared elsewhere has been steadily persevered with. I am pleased here to record my apprecia tion of the facilities afforded me by the editors of these periodicals for this form of plagiarism and to express my thanks to the proprietors of works of less evanescent character the Oxford Medical Publications in particular for allowing me to reproduce here portions of what was written primarily for them

In rereading the proofs of the matter which has been left practically untouched since it first appeared in print, I have been forced to recognize that much of it is in reality once more in the crucible not so much in detail as in principle In therapeutics we often adopt measures merely because we know by experience that they succeed An explanation

that the study of the whole field of the Internal Secretions will enable us to detect and correct morbid tendencies with a degree of success which has been denied to the older methods The microbe —the seed—has ruled the immediate past the future is with the soil, the endocrine glands.

LEONARD WILLIAMS.

123, Harley Street W 1.
January 1, 1916

CONTENTS

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CHAPTER I.

COLDS, COUGHS AND SORE THROATS.

THE inflammatory conditions which are liable to affect the upper air passages are usually attributed to inclement weather and the elements such as damp cold, and chill of which such weather is composed. This is a view which is no longer tenable These inflammatory conditions we now know to be due to the same causes as those which produce inflammation in other mucous membranes—namely irritation and microbic invasion. There is no doubt that these affections are more prevalent during inclement weather and although we may admit that the in clemency by lowering the resisting powers may in some cases and in some degree contribute towards the microbic invasion, it is evident that other and more important factors must also be in operation.

These other factors are provided by the deficient

ventilation of houses, public buildings and conveyances, which immediately ensues when the weather becomes cold or otherwise disagreeable Windows and doors, which in summer time are always kept open, are closed in winter with the result that pathogenic germs are in the latter season allowed opportunities for exercising their effects which are denied to them in the warmer weather. Moreover in the summer people spend much more time out of doors, and are consequently less exposed to the activities of the germs, which, as we know are more readily killed by sunshine and fresh air than by any other means. Colds, coughs and associated conditions are due therefore not to damp and chill, but to microbic invasion. The surest method of avoiding them is to cultivate efficient ventilation, and the most certain method of encouraging them is to tolerate impurity of atmosphere.

The association of 'chills with these conditions is very old, and until comparatively recently these chills were regarded as the cause of the malady Most people now realise that this is not the case. The feelings of chilliness which so often occur at the outset of these complaints are not, as is so often *erroneously* believed, the cause of the symptoms—they are the primary manifestations of the malady the sign which proclaims the success of the microbic invasion. The person who caught a chill and subsequently developed a sore throat was, although he failed to realize the fact, already infected when he

experienced his chilly sensations. It is necessary to insist upon this view because the laity cling with great pertinacity to the chill theory with the result that fresh air instead of being esteemed as a curative and prophylactic agent, is regarded as the deadliest enemy of the human race and great vigilance is consequently exercised in excluding it by every possible means from houses, public rooms and public conveyances. Until people become more enlightened colds and their congeners will continue to afflict them with quite unnecessary frequency

The commonest of all disorders is the catarrh affecting the naso-pharynx, the larynx, or the larger bronchial tubes, which is known as a COMMON COLD For reasons which have just been considered, the term cold, as applied to this condition, is peculiarly unfortunate for not only does it lend support to a mistaken view of the cause of the malady but it tends to obscure what should always be realized in connection with it—namely that it is infectious. It is a well recognised fact that colds are very liable to pass from one member of a household to another which means that they are epidemic in character and, being epidemic they must necessarily be caused by bacterial infection. This fact supplies us not only with an obvious means of avoiding them, but it points unmistakably to the proper way of treating them. The infection induces inflammatory action, and in ordinary people the inflammation begins in the nose. In those who, from adenoids or nasal

obstruction, habitually breathe through their mouths, it may begin lower down in the air passages; but whenever it begins at a site which can be reached by nasal douching or gargling, it is, if taken in time, a very easy matter to abort a cold. This is done by the simple expedient of washing the microbes out of the part with an antiseptic solution, used both as a gargle and a nasal douche.

It is curious to observe how few people know how to use a nasal douche. There are several patterns on the market, all of which have merits but the one which I prefer because I am better acquainted with it than with any other is called the Bermingham Nasal Douche.[1] It is employed as follows

Having filled the douche with the necessary fluid the index finger is kept on the air inlet, and the nozzle placed well inside the nostril. With the head thrown well back and to one side, the operator then raises the finger and if the point of the nozzle is not too tightly pressed against the mucous membrane the fluid will flow into the nostril. What becomes of it then depends upon one thing, and one thing only If the mouth is kept widely open and the patient goes on breathing the fluid will flow out of the other nostril if the mouth is kept closed, the fluid will find its way into the œsophagus, the ear or the larynx giving rise to effects which are always disagreeable sometimes alarming and, in the case of the ear occasionally very serious. The instruction to keep the mouth open

[1] That sold as Dr Woakes' Irrigator is also very good.

should, therefore always be dwelt upon. If the fluid does not flow out of the douche at all, the nozzle must be withdrawn slightly

With regard to the fluid to be used, St. Clair Thomson insists upon the importance of the following three points The solution should be warm—that is, not below 100 Fahr it should be alkaline by reaction and should be isotonic with the blood plasma. If it is of lower specific gravity than the plasma, there will be painful exosmosis from the pituitary surface if of higher specific gravity there will be equally painful endosmosis. In either case the patient will complain of disagreeable and occasionally even of agonizing drawing sensations in the nose. Of preparations which fulfil these conditions, the most elegant and agreeable is that which is sold under the name of Glyco-Thymoline whose active principle is a salicylate It has, however the demerit of being rather expensive. A good substitute is the following

℞. Sodii bicarb. }
Sodii biborat. } ... ... ää gr iv
Sodii benzoat. ... ... gr ½
Eucalyptol ... ... m ⅓
Menthol ... ... gr 1/12
Aquam ... ... ad ℥i.

Solve et misce. Sig : To be used frequently

The following is also agreeable and efficacious :

Hazeline ... ... m xx.
Borax ... ... gr v
Glycerine ... ... m v
Water ... ... to ℥i.

These solutions should also be used as gargles so that the infective material may be flushed as rapidly as possible from all accessible parts of the upper air passages.

By no means the least of the merits of this method of dealing with a nasal catarrh is, that should the catarrh be the first stage of an attack of whooping cough, we are adopting the measures best calculated to cut short the attack, to provide against the spread *of infection, and to prevent the occurrence of the* sequelæ to which this disease owes its gravity. So effectual, indeed, is nasal douching in the treatment of this malady even when delayed until the whoop is established, that to neglect to advise and even to insist upon it, is in the judgment of many to undertake a very grave and a wholly unjustifiable responsibility. An excellent formula[1] for this purpose which is substantially the same as that which used to be known as Dobell's Solution, is:

℞. Sodii bicarb. } ... ... āā gr. xxx.
Sodii biborat. }
Listerini ... ... ʒii.
Glycerini ... ... ʒvi.
Aquam .. .. ad Oi.
M. *Sig.: To be used frequently.*

When the catarrh commences lower down in the air-passages—*e.g.*, in the larynx—the local abortive treatment is not so easy of application, and is

[1] *Annals of Ophthalmology and Otology*, vol. v. No. 4.

consequently not always so successful Nevertheless, it should always be tried and persevered with, because its effects cannot be other than beneficial. The means to this end which I have found most successful consist in the use of oils, such as eucalyptus, well vaporized or atomized in a suitable apparatus and inhaled vigorously and frequently both through mouth and nose.

The atomizers on the market are numerous that sold by Messrs. Oppenheimer under the name of the Universal Vaporizer is convenient, efficient, and comparatively inexpensive. The compound sold by the same firm under the name of Neboline No. 1 consisting of eucalyptus, menthol, and Scotch pine, is very agreeable it is, however expensive. A useful substitute is as follows

Oil of eucalyptus	ℳxx. xl.
Menthol	gr x. ℨi.
Liquid paraffin	to ℥ii.

Dissolve and mix.

Either ingredient may be used alone Oil of eucalyptus is stimulating though less so than thymol (of which 5 grains may be used in place of either of the above, and *dissolved by heat*). Menthol is sedative generally but it is liable to excite lachrymation in some people

Aqueous solutions in the form of sprays may also be used but they are less efficacious than the oleaginous. The following are useful formulæ

℞. Sodii bicarb. } Sodii biborat. } ... ... āā gr v
Acid. carbol. liq ... ... ℳj
Glycerini ... ... ℳxx.
Aquam ... ... ad ℥i.
Misce. Mitte ℥iv

Sig : Spray freely through the nostrils into the throat every four hours, or oftener using Rogers' No. 1 spray

℞. Pot. permang. ... ... gr i.
Sodii chlorid. ... ... gr v
Aquam ... ... ad ℥i.
Solve et misce.

Whether the solution employed be aqueous or oily the patient must be instructed to draw a sharp deep breath each time the air bulb of the atomizer is compressed. In this way the medicament will reach the larynx and the larger tubes.

There would be far fewer nasal catarrhs than there now are if people would only apply to their nostrils the same principles of soap-and water cleanliness which they habitually apply to other parts of the body In foggy weather especially and in dusty weather and most especially in times of epidemics, the inside of the nostrils should be washed with soap and water at least once a day—twice is better It is rather an advantage than otherwise if this little operation produces sneezing The application of soap to the nostrils presents no difficulty to those who shave the upper lip and with them it should be almost automatic. If the same type of soap-and water cleanliness is applied to the throat, the incidence of sore throats would be much diminished

℞. Sodii bicarb. } .. .. .. āā gr v
Sodii biborat. }
Acid. carbol. liq. ♏½
Glycerini ♏xx.
Aquam .. .. .. ad ℥i.
Misce. Mitte ℥iv

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When microbic invasion is successful besides the local measures above noticed, it is desirable to increase the powers of resistance to microbic activity—first, by sending the patient to bed and secondly, by freeing the primæ viæ. This is best done by a mild purgative and a hot bath or better still a hot wet pack. If, in addition to the local symptoms, there should be evidence of constitutional disturbance, such as headache and a slight elevation in temperature then a single nocturnal dose of opium is invaluable. The form which I prefer is liq opii sedativus, and of this at least 20 drops should be given In influenza, taken early enough I regard opium as almost specific but even in common colds its effect in soothing the inflamed mucous membrane and in calming the irritated nervous system is most helpful. As a general tonic after a cold, nothing in my experience has proved so useful as quinine and when giving quinine it is always better to prescribe it in fluid form and preferably as an effervescing mixture.

℞. Quin. sulph. ... ... gr iiss.
Acid. citric. ... ... gr x.
Aquam ... ... ad ℥ss.
M. Sig: The A mixture.

℞. Potass. bicarb. ... ... gr. x.
Ammon. carb. ... ... gr iiss.
Syr. simpl. ... ... ʒi.
Aquam ... ... ad ℥i.
M. Sig: A tablespoonful of the A mixture to be added to two tablespoonfuls of this mixture and taken during effervescence.

℞ Sodii bicarb. }
Sodii biborat. } ... . āā gr v
Acid. carbol. liq .. ♏ j
Glycerini .. .. ♏ xx.
Aquam ad ℥j.

Misce. Mitte ℥iv

Sig : Spray freely through the nostrils into the throat every four hours, or oftener, using Rogers' No. 1 spray

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℞ Quin. sulph. ... ... gr. [illegible]
Acid. citric. ... ... gr. [illegible]
Aquam ... ... ad [illegible]

M. Ft.: The A mixture.

℞. Potass. bicarb. ... ... gr. [illegible]
Ammon. carb. ... ... gr. [illegible]
Syr. simp. ... ... [illegible]
Aquam ... ... ad [illegible]

M. Ft.: A tablespoonful of the A mixture to be added to two tablespoonfuls of this mixture and taken during effervescence.

Quinine in powder is not only capricious in its behaviour but, as compared to a solution it is much more liable to upset the stomach. When dissolved in hydrobromic acid, the drug is comparatively tasteless.

When once the inflammatory process is in full swing the microbic activity is at an end. We can no longer expect any benefit by killing the organisms, it is only their irritative effect upon the air passages that we can hope to influence. And if we wish our interference in a process which is by nature self terminating, to be really beneficial, we must not lose sight of the time-honoured division of expectorants into soothing and stimulating If we stimulate the mucosa in the congestive period, the only affect which we can logically expect to produce is that of increasing the patient s sufferings and similarly if during the stage of free secretion we soothe the mucosa the only reward for our activities will be a tardy and prolonged convalescence. When therefore, the complaint is of rawness and a sensation of constriction either in the throat or behind the sternum, when the cough is hard and accompanied at most by some slight mucus when the skin is harsh and dry and the tongue coated, the only proper treatment consists *in soothing, or*, as they are very properly called depressing expectorants. A very old combination and a very excellent one is as follows

℞	Vin. antimon. / Vin. ipecac.	...	..	.. ss ℥x.
	Spts. ether nitros	...	...	℥xxx.
	Liq. ammon. acetat.	..	...	℥ii.
	Syr. limonis	...	..	... ℥i
	Mist. amygdal.	...	..	ad ℥j.

M. Sig.: Every four hours, or if the distress is great, half the quantity every two hours.

This is a time honoured prescription to whose efficacy in relieving congestion and promoting secretion several generations of practical therapists have borne grateful and willing testimony. There is one counter indication to the use of such a mixture to which it would seem necessary to direct special attention and that is the existence of any valvular disease of the heart in the patient for whom it is proposed to prescribe it. I have known at least one fatal result to ensue from neglect of this very obvious precaution. Ipecacuanha and antimony be it remembered are both very powerful cardiac depressants and if we are careless enough to give them to a patient with an organ which is already labouring under mechanical disadvantages we must not be surprised if by so doing we provide the proverbial last straw in the heart's burden. When a complication of this nature confronts the practitioner he must content himself with relieving the congestion by such means as poultices, hot packs and purgatives, reserving his drug remedies for the relief of any symptoms which may be caused by the state of the heart. I must not be understood to imply, however

very generally exaggerated. Where there is any obstruction in the nose itself to the free passage of air that obstruction should be removed as soon as possible by operative measures. This is also true of gross obstruction caused by adenoids, but it is to be remembered that mild degrees of these vegetations are very rapidly and very effectually removed by pulmonary exercises, and that with the removal of the adenoids the cough vanishes It is well for a young practitioner to remember that suggestions of the tonsillotome and its congeners do not awaken in private patients the same acquiescent indifference which may be relied upon in those of the hospital class, and that a reputation for a too-ready appeal to operative measures is one which it is prudent to avoid. The very simple details of chest exercises or pulmonary gymnastics should, therefore be mastered in order that they may be explained to parents and intelligent nurses.[1]

A cough is sometimes excited by a relaxed and elongated uvula, and such a cause should be suspected if the fits of coughing seem to be provoked by the recumbent posture. A relaxed uvula seldom arises independently it is usually a part of a general relaxation of the neighbouring structures, secondary to nasal or postnasal obstruction or other cause, and may be treated symptomatically by an astringent gargle such as the following

[1] Harry Campbell Respiratory Exercises in the Treatment of Disease (H. K. Lewis)

℞ Aluminis ... ... gr x.
Glycerini ... ... ʒj.
Inf. rosæ acid. ... ... ad ℥j.
M. Ft garg. Sig.: To be used frequently.

Or the parts may be painted at suitable intervals with glycerine of tannin or with a mixture of equal parts of liq. ferri perchlor. and glycerine. This local treatment should be supplemented by measures directed to the removal of the cause, which is very often gouty or rheumatic. A brisk mercurial cathartic is always helpful.

When the uvula, in addition to being relaxed, is also oedematous, it should be seized at the point by a pair of forceps, drawn into the mouth, and freely scarified with a sharp knife. Such a proceeding is very simple, is almost painless, and the relief which it gives is instant and complete. The occurrence of such an oedema, however, even when it has been successfully dealt with by the above means, should never be lightly regarded; for although the majority of cases terminate favourably in a short time, especially when the underlying cause is discovered and treated, in a certain proportion of them the oedema progresses downwards until the glottis is involved. Such a complication, according to Sir Felix Semon, may be suspected if the ordinary redness of a relaxed throat presents a bluish tinge, or if the element of dysphagia is out of proportion to the amount of inflammation present. The patient in such circumstances should be carefully watched,

and the friends warned of the possible danger mixture containing ♏ xx. of liq ferri perchlor ♏ x. of liq hydrarg perchlor to 8 ounces of wa should be given preceded by a brisk cathartic preparations be made either for intubation of larynx or for the performance of tracheotomy on occurrence of urgent symptoms.

A cough which presents very distinctive featu is that which is associated with chronic irritat either in the larynx or trachea. The irritation oft amounts to nothing more serious than a relax and slightly catarrhal mucosa, the aftermath of bronchitis or an attack of influenza. The latter especially liable to give rise to it but it may occ independently of any obvious cause and is th usually the result of anxiety worry and overwo It is more common in relaxing climates, and aggravated by dull damp weather Such a cou may be more or less present throughout the da but it is especially in the morning and at nig liable to energetic exacerbations. The amount matter voided *is very small in proportion to t* violent efforts which its expulsion seems to entail a consists mainly of colourless glairy mucus. During t paroxysms the patient's face becomes congested, a so rapid are the expulsive efforts that he is unable inspire A climax is often reached by a spasm of t diaphragm, which causes retching or even vomiting

Having regard to these facts, it is not surpris that such a cough is frequently mistaken for whoopin

cough, its resemblance to which is further borne out by its obstinacy to ordinary cough mixtures. If it is remembered that a cough of this kind is essentially a manifestation of debility, there should be no difficulty in affording speedy relief. Perhaps the best remedy of all is a complete holiday in some really bracing climate such as that of Margate and the other stations on the east coast. This, however, may be out of the question, so that it is well to consider other means.

As a measure for allaying the cough, an acid in combination with glycerine is very useful, and one of the best acids for the purpose is the acid phosphor. dil., of which 25 to 30 minims should be given to the drachm of glycerine in an ounce of water three times a day. To such a mixture the addition of about 2 grains of quinine and 4 minims of tr. nux vom. will be found helpful in relieving the relaxed state of the mucosa, which is the real cause of the trouble. Gargles are of very little service in this condition—they are, indeed, quite useless—but lozenges are most valuable. That which I have found most effective is the krameria lozenge. It is not very unpleasant, and it certainly helps to restore tone to the affected parts. Patients should be warned in connection with this lozenge that it is not meant to be sucked. It should be allowed to remain between the teeth and the cheek, and to dissolve slowly of its own accord, otherwise its activities will be expended upon the oesophagus and the larynx remain altogether uninfluenced.

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A cough which presents very distinctive features is that which is associated with chronic irritation either in the larynx or trachea. The irritation often amounts to nothing more serious than a relaxed and slightly catarrhal mucosa, the aftermath of a bronchitis or an attack of influenza. The latter is especially liable to give rise to it, but it may occur independently of any obvious cause, and is then usually the result of anxiety, worry, and overwork. It is more common in relaxing climates, and is aggravated by dull, damp weather. Such a cough may be more or less present throughout the day, but it is especially in the morning and at night, liable to energetic exacerbations. The amount of matter voided is very small in proportion to the violent efforts which its expulsion seems to entail, and consists mainly of colourless glairy mucus. During the paroxysms the patient's face becomes congested, and so rapid are the expulsive efforts that he is unable to inspire. A climax is often reached by a spasm of the diaphragm, which causes retching or even vomiting.

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There is another warning in connection with lozenges of all sorts of which it is well to remind patients, namely that they should be taken out of the mouth if there is any immediate prospect of sleep for during sleep not alone a solution of its ingredients, but the whole lozenge, might easily find its way into the larynx with disastrous consequences.

If such measures fail to relieve the cough, there need be no hesitation in adding as a temporary expedient, say 10 minims of nepenthe *to each dose of the above* mixture. Heroin ($\frac{1}{12}$ to $\frac{1}{6}$ grain) is most valuable

The coughs which *arise in association with gastric*, hepatic and intestinal derangements are to some *extent characteristic* *They are generally loud, short*, and frequent and do not result even in the discharge of *mucus* that is *to* say they express a reflex and not a direct irritation. Their treatment is necessarily bound up with the discovery and efficient management of the original cause. More often than not this will be found to be chronic constipation it may turn out to be intestinal worms inactivity of the liver gastric dilatation or some lesion even more serious, the important point to remember being that, apart from aneurism a cough which is persistent, obtrusive and futile generally has its cause not above but below the diaphragm.

Another kind of cough which is associated with gastric derangements is that which is typically seen in alcoholics. In its main features this cough may resemble closely that just described as laryngeal and

due to debility indeed alcoholics very frequently have a huskiness due to relaxed vocal cords, but the existence of the chronic poisoning is generally easy to detect, and its detection not only prevents any misapprehension as to cause but points unmistakably the right line of treatment.

Having mentioned *Influenza* it seems fitting that I should say a word or two in connection with it. It may begin as a minor malady but it is very apt to become the reverse. If the illness be taken in time and the patient sent to bed until the temperature and other obtrusive symptoms have subsided, the disease is easily kept within the category of minor conditions but if it is allowed to obtain a hold of the patient, so as to give dangerous sequelæ an opportunity of developing then influenza is liable to be one of the deadliest of diseases. I know of no condition in the presence of which I feel less hopeful than a pneumonia which is secondary to influenza—a complication which supervenes most frequently one might almost say exclusively in cases where the primary condition has been regarded as a passing matter which should not interfere with the ordinary affairs of life The necessity for early recognition and prompt treatment of these cases even when slight, is further emphasized by the fact that when they are allowed to be ambulatory the subsequent depression is always much more pronounced and of infinitely longer duration than when they are taken in time and suitably treated.

It is not that there is nowadays, any tendency either to overlook influenza or to belittle it when present. The difficulty is, indeed in exactly the opposite direction, for it is quite certain that many conditions are constantly labelled 'Influenza which are no more due to the causal bacillus than they are due to the Bacillus typhosus Since about 1890 influenza has become a sort of diagnostic rubbish-heap on to which is cast every febrile state which cannot with certainty be referred elsewhere. There is really no reason for this because the causal bacillus is as characteristic as the Klebs-Loeffler or any other whose presence is regarded as distinctive of a certain disease, so that a positive diagnosis of so highly infectious a condition should not be made without the confirmatory evidence which the presence of the bacillus affords. It is of course, often exceedingly difficult to be certain as to the exact nature of a febrile condition at first, or even subsequent, visits but there is no excuse for seeking to overcome the difficulty by idly attaching a label which though it may be satisfying, is both wrong and alarming It is much better to be frank in such matters the practitioner who is straightfor ward always commands more confidence and greater respect than the one who poses as omniscient.

The presence of real influenza may always be suspected from the sudden onset of symptoms with a high temperature. The symptoms may vary in degree and in kind (they are divided into nervous, respiratory and gastro-intestinal) and their severity

is not often great, but when they appear suddenly—so suddenly as to suggest a blow from an unseen hand—then the probability is that they are influenzal in origin. Occasionally of course the symptoms themselves are overwhelming in their severity—so overwhelming in fact, as to convert a strong healthy man into a prostrate mass of aches and pains in less than five minutes. The temperature at the onset is often high, reaching 105° F or over but it may be quite low and even, according to some subnormal from the first. Typical cases in an epidemic are by no means difficult of diagnosis, but atypical cases, especially where they are sporadic, should always be referred to the bacteriologist before a positive opinion is given.

If the disease is seen at its onset, the patient ought to be sent to bed at once and kept there until the temperature has fallen to normal and the attendant discomforts have ceased. There is nothing which hastens this end so much as an initial dose of opium I was first made acquainted with its merits about the time of the 1890 epidemic by a note in one of the journals by Sir Samuel Wilks, who told how according to his diary Prince Napoleon had been cured by such a dose which had been prescribed by Corvisart Since that time I have appealed to it on many occasions, and if in a sufficiently early stage, never in vain. It is, however necessary to give a full dose say 20 to 30 minims, of liq opii sed if the beneficial effect is to result. This effect shows itself as a rule, in a remarkably short space of time and consists in

the disappearance of the pains and the production of deep and refreshing sleep So much impressed have I been with this line of treatment that I have learned to regard opium almost in the light of a specific against the bacillus of true influenza. That it should relieve the pains and soothe the irritated nervous system is not on general principles surprising, but that it should effect its purpose so rapidly so completely and so permanently points to some action other than the ordinary effect of the drug, and is highly suggestive of some specific influence (see p 52)

When the acute stage is past, quinine seems to be the most useful drug It appears to render the subsequent depression less profound and of shorter duration. In connection with this depression, it is well to remember that it is often intensified by excessive and injudicious feeding The keeping up régime which is so commonly prescribed during this stage, is regarded by the anxious friends as the height of therapeutic wisdom, but in reality it is liable to be quite the reverse. The system is very apt to *become overloaded with effete matters*, and the poisons have in consequence fewer opportunities for escape The best thing to do with such a patient is to see that the food is simple and nutritious, containing little if any meat plenty of vitamines and some alcohol in the form of a well matured wine, and to arrange for a complete holiday at the seaside as soon as possible. The locality chosen must depend, among other things, upon the time of year and the type

of the attack, but bracing climates are as a rule strongly indicated

The next subject to be considered is that of **SORE THROAT** There are of course several kinds of sore throat, and I wish it could be said that the degree to which specialism in this department has attained had been productive of any corresponding degree of precise knowledge as to their varieties and causation. To the plain man, where it does not mean scarlet fever or some similar condition, in which accompanying symptoms are present to clear the issue, sore throat spells tonsillitis and with regard to a tonsillitis, the first point to decide is whether or not it is diphtherial. In these days of bacteriological investigation and antitoxin treatment the question may not seem to present the same importance as it did in the days when we were still without such assistance. But bacteriological investigation takes time, and reliable antitoxin is not always easy to procure so that it is well to be prepared with a plan of campaign which leaves such luxuries out of account.

Speaking as one who has had more than his fair share of experience in diphtheria, I may say that I know of no condition which in its slighter forms, at any rate is more difficult of diagnosis. It is even now no uncommon thing for a sore throat which has been dismissed as a passing matter tardily to vindicate its true character by a legacy of alarming and even fatal paralysis. Apart altogether there-

fore, from the question of preventing the spread of infection—a question whose importance and urgency cannot be too strongly insisted upon—it is essential that we should not, if we can help it, fail to recognise a case of diphtheria when we see it. Now there are two aids to diagnosis which, partly perhaps, on account of the luxury of the bacteriological short-cut, seem to be falling into increasing disuse of which, for this reason, and as being easy of performance and capable of yielding information of the utmost value it is well that we should remind ourselves. The one is the state of the knee-jerks, the other the state of the urine. It is generally known, perhaps that in diphtheria the knee-jerks are liable to disappear and that albumin is often present in the urine. But it does not seem to be sufficiently realized that these phenomena, when they do occur occur early sometimes very early in the disease and that it is therefore our bounden duty to look for them in every case of sore throat, however slight, which presents itself to our notice

Now let us suppose that we have detected such a case, and that a considerable amount of precious time must necessarily elapse before any reliable antitoxin can be obtained. What are we to do? Taking the ordinary precautions as to isolation, etc., for granted, the first thing to do is to give the patient a mixture containing biniodide of mercury Before the days of antitoxin I had learned to have so much confidence in this drug that I came to regard the occurrence

of a case of diphtheria with something very nearly approaching to equanimity The biniodide is insoluble in water though freely soluble in the presence of an excess of iodide of potassium. The following is a convenient way of prescribing it

℞.	Hydrarg perchlor	gr i.
	Potass. iodid.	gr xxx.
	Glycerini	℥ii.
	Aquam	ad ℥viii.

In such a mixture a double decomposition takes place between the two salts, and the amount of resulting biniodide is rather less than the original amount of perchloride, so that each ounce contains rather less than ⅛ grain. The ordinary tablespoonful is, therefore, a perfectly safe dose for an adult and if its effects are carefully watched, it may be frequently repeated. The glycerine is added with the view of causing the mixture to adhere to some extent to the fauces, and of thus securing a local as well as a constitutional effect. The biniodide of mercury as a bactericide is four times as powerful as the per chloride, and it has no tendency as the perchloride has, to throw down an inert albuminate when brought into contact with the tissues. Whether for these reasons, or because it is especially inimical to the Klebs-Loeffler bacillus in the same way that nitrate of silver is especially inimical to the gonococcus there can be no doubt that, antitoxin apart, HgI_2 is a far more effective weapon in combating diphthe

variations as special circumstances may suggest, constitutes what the advertisements of quack medicines describe as a sovereign remedy, one of the very few with which I am acquainted

℞.	Tr aconiti	♏︎l. v
	Potass. chlorat.	gr v
	Liq ferri perchlor	♏︎xx.
	Liq hydrarg. perchlor	♏︎x.
	Liq strychninae	♏︎v
	Glycerini	ʒii.
	Aq chlorof.	ad ℥ss.

M Sig : Every four hours, or better still, half the quantity every two hours, at any rate until the temperature falls.

As in the case of the previous mixture, the aconite should be stopped as soon as the temperature subsides, and the other ingredients continued until the local conditions in the throat are satisfactory

This prescription owes its efficacy to its antiseptic powers Few people seem to realize that liq ferri perchlor is, when taken internally a bactericide of the utmost value It was no doubt originally suggested in sore throat because of its astringency but this attribute would not even partially explain its almost magical effects in a tonsillitis of septic origin. The liq hydrarg perchlor is added with the view of accounting for any cocci which may escape the attention of the iron salt, and the glycerine to enable the mixture to remain longer in contact with the fauces than it would otherwise do Strychnine in addition to being a general tonic, appears to have an antiseptic effect in most cases of septic sore throat, and it is, therefore, always well to include it. Chlorate of potassium is

given more as a matter of routine than anything else It has a reputation in inflammatory states of the pharynx and if it does no good it certainly does no harm. Treated with an initial purgative of a few grains of calomel and by perseverance with this mixture, a tonsillitis which is neither diphtheritic nor rheumatic will yield completely in an astonishingly short space of time

In the matter of the taking of temperatures not only in cases of sore throat, but in all cases there is a word of warning to which I should like to direct attention. It has been proved that the temperature in the mouth is very materially influenced by many comparatively insignificant conditions which are purely local to the mouth itself. Thus hot fluids such as tea will raise the temperature two or even three degrees, and maintain this elevation for two hours or more. Food of any sort will also raise the temperature, though to a slighter degree, and cold fluids will depress it. The moral of this is that we should never be satisfied with a temperature which has been taken in the mouth. This is, of course, infinitely the most convenient place in which to take it, especially in a person fully dressed but we do well to remember that a record so obtained is very unreliable under all circumstances, and that it is conspicuously so when any portion of the buccal or pharyngeal mucous membrane is inflamed.

There is a condition which as it is often described as a FEVERISH COLD it is as well to notice here

In cases where there is reason to suspect typhoid, there is one simple diagnostic point which, when present, is very helpful. It is that in this disease though the temperature is usually very high, the pulse may be low the one registering say 104° F and the other from 70 to 80 In cases of undoubted typhoid a rapid pulse is of evil prognostic omen.

A CONSTANT SUCCESSION OF COLDS occurring in the same person should never be lightly regarded. The recent impetus which has been given to the study of tuberculosis has resulted in the bringing to light of various signs and symptoms which indicate a condition of what is called pretuberculosis—a condition, that is, in which although there may be nothing which permits of a positive diagnosis, there are nevertheless indications of sufficient importance to warrant grave suspicion. The time has now gone by when, before commencing treatment, we used to wait in prayerful patience until there was an involvement of the pulmonary area so definite as to be accessible to ordinary percussion and auscultation. We now realize that to wait for the classical signs of phthisis is to allow the period to slip by in which treatment is most likely to be effective. Phthisis is, no doubt, under favourable circumstances, a very curable disease but the condition precedent to its ready curability is its detection in its earliest—that is, its pretuberculous—stage.

The stigmata which may be said to reveal the exist-

ence of this stage are like a constant succession of colds for the most part, individually so unimportant that they are properly regarded as minor conditions It is only the association of several or many of them which confers upon them their gravity They would seem, therefore to deserve more than a passing notice

In common with all other toxic agents the poison of tubercle has certain physiological effects. Of these one of the most important and far reaching is its relaxing effect upon the peripheral vessels. When it is borne in mind that the tuberculous toxin is initially above all things a powerful vaso-dilator it becomes comparatively easy to understand and recall many of the phenomena of pretuberculosis which otherwise seem disjointed and obscure.

Directly consequent upon this vaso-dilation is the important symptom of *tachycardia*. What is true of most of the other symptoms to which in this connection, reference will be made is very conspicuously true of tachycardia—namely that it is by no means always present. In cases of demonstrable tuberculous lesions it is of course, a prominent and constant symptom but in the very earliest stages there are frequently no signs of heart-hurry Nevertheless an unduly rapid pulse in an otherwise seemingly healthy person should always suggest tuberculous infection as its cause A grave error is often committed in attributing such a tachycardia in young men to excessive tobacco-smoking

Another symptom which is directly due to the vaso-dilation caused by the poison is *albuminuria*. A good deal of very unnecessary, and I may add, scarcely justifiable, alarm is occasioned to patients and their friends by the unduly narrow view which is commonly taken of the significance of this symptom, for albuminuria it seems necessary to insist, is a symptom, and nothing more than a symptom and it is as absurd to regard it as synonymous with kidney disease as it would be ridiculous to consider epistaxis as synonymous with typhoid fever Albumin will appear in the urine if the kidneys are in any degree passively congested. A widespread vaso-dilation will readily cause this passive congestion especially if the patient be going about in the ordinary way—if, that is, he is for the most part in the erect posture. This is a phenomenon with which we are all familiar in the cyclical or postural albuminuria of adolescents a condition which has been attributed to many causes, and has in numberless instances been made the occasion of solemn head shakings but which is in reality due simply to a want of tone in the muscular coats of the peripheral vessels, giving rise to passive congestion in the renal area. Owing to the vaso-dilative effect of the poison this passive congestion is very liable to occur in early tuberculosis. It is not, of course, suggested that all those who present the phenomenon of cyclical or postural albuminuria are necessarily pretuberculous but I am distinctly of

opinion that the discovery of albumin in the urine of an adolescent, which has not been voided immediately after exercise is a sign which should lead to a very minute examination for other evidences of tuberculous invasion Collier of Oxford and others have conclusively shown that albumin in the urine of young men soon after exercise is not only without morbid significance, but that it may even be regarded as a normal sequence of severe muscular exertion

Another symptom of early tuberculosis in the causation of which vaso-dilation may reasonably be considered to bear some part is *dyspepsia.* Dyspepsia, especially of the asthenic type, is due to a faulty adjustment between the blood pressures in the local areas. A widespread vaso-dilation disturbs the normal balance and tends to deprive the gastric area of that increment of blood which for the purposes of the digestive process is essential to it. The dyspeptic symptoms which so commonly forerun the ebullition of definite tuberculosis more especially of the lung are thus easy to understand. The difficulty consists in the fact that we are so liable to forget their true significance. Such a dyspepsia may be accompanied either by diarrhœa or constipation but in the earliest stages constipation is much the more common of the two.

Two other signs which may be included under the head of results of vaso-dilation—namely *mental hebetude* and *muscular debility*—are of course, by no

means peculiar to tuberculosis but, like others their presence—especially their continued presence—in young people without obvious cause, goes to swell the number of points upon which a superstructure of reasonable suspicion may be erected. The majority of lethargic children who are punished for indolence at school, when they are not the subjects of eyestrain or nasal obstruction, owe their lack of energy and want of comprehension to the relaxing effects of the tuberculous toxin, and a large number of adults who are idly labelled neurasthenic undoubtedly owe their nervous exhaustion to the early inroads of the bacillus.

Among the many causes which give rise to *suppression of the menses* the action of the poison of tubercle should not be forgotten. This is another symptom which is due directly to its vaso-dilative power Menstruation is effected by the dilation of the pelvic vessels coincidently with a contraction of the other systemic arteries. If the contraction of these arteries is prevented as by nitrite of amyl or trinitrine, the menstrual flow does not appear The poison of tubercle acts in the same way though less powerfully and hence it is that amenorrhœa is so common a precursor of obvious tuberculous mischief

The second physiological effect of the tuberculous toxin under which in our efforts to generalize we may group some of the phenomena of the very early stages is irritation of the nervous system The most

important member of this group is certainly *pyrexia*. The fever of tuberculosis is one of the most interesting features of this complex disease. It is, as a rule slight, sometimes so slight as to escape the notice of all but the most meticulous observer and, although it is almost invariably present, it is usually only at night that it is to be detected. By no means infrequently it follows in the wake of a pyrexia due to some obvious and well recognized cause, and seeks, as it were, to conceal its real significance by masquerading as a continuance of this initial complaint. But perhaps the most characteristic feature about the fever of tubercle is its persistence. We have all been taught to suspect the operations of the bacillus typhosus in a case where malaise and a temperature represent the only departures from the normal. It does not reduce the value of such advice to recall the saying of the late Dr Moxon, of Guy's Hospital to the effect that if a candidate at an examination failed to include tubercle among the causes of continued fever he always referred him to his studies. Among the many negations and ambiguities of this evasive and protean disease we have then this positive and unequivocal sign to aid us that fever whether it be of the intermittent, remittent, or hectic type, especially if the rise be slight and present only in the afternoon between the hours of 2 p.m. and 6 p.m., which persists beyond the allotted span of recognizable fevers, is in all human probability tuberculous in origin.

It is however necessary to remember that a temperature of 99° F to 99·6° F is not uncommon from 2 to 8 p.m. for three or four days before a perfectly normal menstrual period. Moreover, Kingston Fowler says that the only form of pyrexia which can be regarded as pathognomonic of tubercle is that in which the morning temperature is higher than the evening reading A subnormal temperature when persistent and most pronounced in the evening is generally due to thyroid insufficiency

To an undue irritability of the nervous system we may I presume attribute the *psychical characteristics* of most pretuberculous persons The sufferers from gross lesions are notoriously unduly, and even pathetically optimistic in their mental outlook, but such is seldom the attitude of the pretuberculous. The atmosphere surrounding the latter can only be described by the French word *difficile* It is not that they are necessarily aggressive, though they sometimes are, but they present a conspicuous absence of what Matthew Arnold used to describe as sweet reasonableness. They are passive resisters to any suggestions for their welfare and they are apt to try the tact and patience of the physician more severely and more obstinately even than people who are definitely insane. A change of manner and disposition in this rather indefinite direction, more especially when associated with other signs, constitutes confirmatory evidence of very anxious omen.

Very considerable importance is attached in France

to a sign of protuberculosis, which is presumably the direct outcome of irritation of the nervous system, of which in this country we hear very little—namely an *exalted sexual appetite* The toxin of tubercle would seem especially in young men to exercise a very decided aphrodisiac influence and our French friends contend that in the many cases in which the disease appears to supervene as a fitting nemesis upon a licentious adolescence, the real truth lies in the fact that when the unfortunate patient embarked upon his immoral career he was already the subject of tuberculous invasion—that it was, in fact, the action of the toxin which impelled him to the unbridled gratification of his passions. This view of the matter is well worthy of serious consideration among people like ourselves, in whom an unduly literal interpretation of the Old Testament teaching has begotten a belief in the direct intervention of Providence for the immediate physical punishment of moral transgression.

Trousseau was the originator of the saying, which has been attributed to many physicians since his time that an *anæmia* which does not yield to iron is probably due to tubercle It would be difficult to overestimate the value of the practical lesson which this saying is intended to convey The form of anæmia to which it refers is, of course a general anæmia in young girls we should call it chlorosis An examination of the blood reveals nothing which serves to distinguish it from chlorosis, but it is of

paramount importance that it should be so distinguished, and that as soon as possible. There is also a local anæmia, which as being more common is of even greater importance than this general anæmia, and of which, in our search for the stigmata of pretuberculosis, we do well to remind ourselves. This is the anæmia of the soft palate with which throat specialists are familiar in all cases of laryngeal tuberculosis. Now this is a symptom which frequently *occurs quite independently of a general anæmia, and* independently also of definite laryngeal tuberculosis it is, in fact, a valuable sign of pretuberculosis, and one which from its ease of recognition should always be looked for It seems hardly necessary to point out that in the other two classical chronic diseases—namely gout and syphilis—the soft palate, instead of being ischæmic and insensitive, is almost invariably injected and irritable. The pretuberculous throat supports a laryngeal mirror with equanimity the gouty or syphilitic throat will often refuse to tolerate it until cocaine has been liberally applied.

In connection with the throat there is another matter to which it seems pertinent here to refer and that is the significance of *functional aphonia.* This is commonly and very authoritatively described as one of the stigmata of hysteria, but it is now being invested with a fresh importance, inasmuch as it is confidently regarded as one of the very earliest manifestations of pretuberculosis.

Among the symptoms of pretuberculosis the exact

nature and I am quite convinced that it is not so It is nevertheless right that we should regard a person who has had a definite pleural effusion with a certain amount of anxiety There is, however one form of pleural effusion which is to be regarded with very special anxiety and that is the form which comes on without pain, fever cough, or any of the other signs which usually proclaim the onset. The patient feels unwell rather than positively ill his only complaint is dyspnœa but when his chest is examined, one pleura is found to be full of fluid. This stealthy form of pleural effusion may follow some definite pulmonary disease or it may occur independently of any previous illness. It is perhaps rare, but when it does occur it almost invariably connotes tuberculosis. When we do meet with it, therefore we do well to treat it with all the circum spection which its true inwardness demands.

When suspicions have once been aroused, it is of course our duty to institute a minute search for any thing by which they may be confirmed. The lungs should be examined for weak breathing especially at the bases for harsh or cog wheel breathing especially at the apices and the possible presence of enlarged lymphatic glands, more especially in the neck and axillæ, should engage our attention. The details of these matters are carefully reviewed in most of the text-books so that they need not be considered here.

An accessory diagnostic aid which has the double merit of helpfulness and ease of application is the *ulnar reflex.*[1] The patient's forearm is bared and the arm placed in the flexed position, with all the muscles especially those of the fingers fully relaxed. If a pin be now sharply drawn along the whole length of the ulnar side of the forearm from elbow to wrist, in most tuberculous cases the abductor minimi digiti will contract, and cause a distinct reflex wrinkling of the hypothenar eminence. This response of the abductor minimi digiti while it cannot be called pathognomonic of tuberculosis may nevertheless be regarded as confirmatory evidence of the strongest description. It is very seldom present in conditions other than tuberculosis, but is by no means always present in cases which are undoubtedly tuberculous. The response has seemed to me to be more readily elicited in those accustomed to use the small muscles of the hand, and very difficult to obtain in those who are engaged chiefly in coarse employment. Like many other valuable signs there is doubtless a certain degree of ambiguity in connection with it. When it speaks, within certain limits it speaks true but when it does not speak we must not allow ourselves to be lulled by its silence into any false sense of security

When all the clinical methods have been exhausted we can, when still in doubt, carry our appeal into other though not necessarily higher courts. It is

[1] Phipps Institute second Annual Report. Dr J J Galbraith (*Practitioner*, June, 1907).

The following formulæ have stood the test of time[1]

℞.	Sodii bicarb. ...	..	...	..	gr iii.
	Sodii biborat.		..		gr iii.
	Acid. carbol.				gr i.
	Sacch. alb.	..	..	..	.. gr v
	Aquam			..	ad ℥i.

M. et solve. Detergent.

℞.	Tr benzoin co	..	..	..	℥v
	Sodii biborat. ...	..	..	...	gr v
	Sacch. alb.	..	...	..	gr v
	Aquam	..			ad ℥i.

M. Sedative.

Seigle s steam spray producer is a very useful apparatus when a warm spray is preferred Used in this apparatus, the following was a favourite combination of the late Mr Arthur Durham s in the treatment of 'hospital throats

℞.	Boracis..	...	..	...	℥iss.
	Acid. boric.	..		...	gr xl.
	Tr. iodi	...	...	..	℥ss.
	Liq morph. hydrochl.		..		℥i.
	Glycerine	..	...		℥i.
	Aquam	...	..	... ..	ad ℥viii.

M.

This may be used for ten minutes every hour and will be found very soothing

Gargles.

About half a fluid ounce should be taken in the mouth for each act of gargling, and this should be

[1] See Pharmacopœia of the Hospital for Diseases of the Throat.

repeated four times on each occasion. Gargles should be used about every four hours.

℞.	Potas. chlorat. ..	gr xii.
	Sodii bicarb.	gr vi.
	Potas. bicarb.	gr vi.
	Aquam	ad ℥i.
	M Ft. garg Detergent and sedative.	
℞.	Resorcin	gr x.
	Aquam	ad ℥i.
	M. Ft. garg Antiseptic.	

The following is a useful snuff

℞.	Menthol	gr viii.
	Iodol	gr lxxx.
	Acid. boric.	gr ca.
	Sacch. alb.	℥i.
	M. Sig.: To be used as a snuff.	

Cough Mixtures.

To allay Tickling Cough.

℞.	Tr camph. co.	ʒii.
	Oxymel scillæ	ʒii.
	Syr. tolu.	ʒii.
	Glycerin.	ʒii.
	M. Dose: 1 drachm.	
℞.	Heroin	gr i.
	Acid. hydrocyanic. dil.	♏xxx.
	Oxymel scillæ	℥ii.
	Syr limonis	ʒii.
	Aquam	ad ℥i.
	Dose: 1 teaspoonful.	

An exceptionally agreeable mixture is that sold by Ferris and Company of Bristol under the name of syr pectoralis rub

term 'dyspepsia,' this would not at first seem to be a simple matter. In quite a recent text-book the varieties of gastric indigestion are given as follows: atonic, gouty, renal, irritative, flatulent, and acid; and reference to other text-books would in all probability reveal several more. But, in that they suggest essential distinctions, these terms are in reality misleading. It is better therefore to discard them altogether and to classify functional dyspepsias under two heads only—the sthenic and the asthenic. These two present distinct and definite clinical types, with different pathology, different symptomatology, and very different treatment. All else is chaff and dust, which let the wind blow whither it listeth.

But before we proceed to the details of this classification, it is necessary to consider briefly the main facts of gastric digestion in the light of the researches of Pawlow and others which have recently been admirably crystallized in a short paper by Dr Langdon Brown.[1]

We know that the masticated and insalivated food passes from the mouth along the œsophagus into the stomach, where it is acted upon by pepsin and HCl, and the arresting feature in connection with the above-mentioned researches is the prominent part which, in their light, must henceforth be assigned to the action of HCl. It used formerly to be believed that pepsin was the predominant partner

[1] On the Rational Treatment of Gastric Disorders, *Practitioner*, October, 1904.

in this association it is now recognised that HCl is of infinitely more importance. The presence of the acid is essential to the activity of the ferment, and if HCl is not present in sufficient degree, no conversion of the food can possibly take place. The mass becomes a mere mechanical irritant to the mucosa, and excites only the outpouring of alkaline mucus. This in its turn surrounds the mass and renders its permeation by the digestive fluids still more difficult. But this is not all. HCl which is thus seen to be necessary to gastric digestion, is by the above-mentioned researches shown to be necessary also to pancreatic digestion. Bayliss and Starling have shown that the hydrochloric acid of gastric juice acts on the *pro-secretin* stored in the intestinal mucosa to form *secretin*, a specific stimulant to the flow of pancreatic juice. Therefore if there is not a due secretion of acid, pancreatic digestion is impossible.

Now, we know that the functions of the pancreas include the digestion of fats and the elaboration of such of the carbohydrates as have escaped digestion by the saliva, so that it is evident that the absence of a proper quantity of HCl in the gastric process entails serious effects not only upon the digestion of proteids but upon the digestion of all the proximate principles of food, proteids, carbohydrates, and fats. It is therefore impossible to overestimate the importance of the presence in full force of this constituent of the gastric juice

which are still present when the time for the next meal has arrived. If, however just before that meal is taken—say half an hour before—we put into the stomach a draught of water containing an alkali, we are applying lavage to that stomach—we are washing it out with a solution which is of all others the best calculated to remove the sticky mucus which is adhering to its walls and occluding the mouths of the secreting glands.

Herein, then, resides the efficacy of the practice of giving alkalies before meals—the organ is relieved not only of the mucus, but also of the undigested residue of the last meal, and is thereby cleansed and prepared for the reception of the next. And, as I have said it matters nothing in this connection which form of dyspepsia we are dealing with, for in both there are undesirable matters to be removed, and in the treatment of both, a clean stomach for each meal is a great desideratum

One practical point emerges from these considerations, namely that if our desire is to wash out the stomach, we should see to it that the fluid is not stinted. The alkali — say 10 grains of sodium bicarbonate—should therefore be dissolved in, or immediately followed by, a full half pint of water preferably hot.

In one other respect, and in one other only, is it unnecessary from the point of view of treatment, to distinguish between the two forms of dyspepsia—I mean the freeing of the primæ viæ. Above all

things, let the state of the bowels engage the most serious attention. The presence of constipation will obscure every issue and nullify every therapeutic effort. The best initial measure is undoubtedly a dose of calomel This drug is not only a purgative but it is also the very best of all intestinal antiseptics. Further the excretory function of the skin should not be despised. It is too large a question to be discussed here but there are many facts which point to the conclusion that some of the more obscure phenomena of indigestion are to be explained by assuming that defective cutaneous activity reacts in a special manner upon the gastric secretions. Be this as it may a hot bath or a hot wet pack at the onset of treatment will often make all the difference between prompt and tardy relief.

Now how are we to distinguish between those two forms of dyspepsia, the sthenic and the asthenic? There are certain marked differences both in the type of patient and in the nature of the symptoms which cannot fail to strike the careful observer The sthenic form occurs in people who seem otherwise to be in robust health — people who are for the most part strong active and energetic and who are seldom teetotallers. The asthenic form appears in weakly nervous, convalescent, or overworked persons who may be teetotallers, but who are generally tea-drinkers. The one is essentially an active positive the other a passive negative type and the distinctions between the

either upon the secretion of gastric juice or upon the digestion of the food itself. Effectually to treat either form of dyspepsia, then, it is necessary to rely absolutely upon the action of the drugs which are introduced into the stomach after the meal is taken.

Let us now take a case of STHENIC DYSPEPSIA, and see how it should be treated. We will assume the patient to be a man of middle age who has at one time been fond of athletics, but who has been obliged by business exigencies to give them up, who is capable hard working and energetic. He complains of epigastric discomfort after food, flatulent eructations, and mental irritability. The symptoms are not pronounced until some time has elapsed after a meal, indeed he not infrequently associates them with the period *before* a meal, and may attribute them to hunger a theory which obtains support from the fact that a feeling of 'sinking in the epigastrium is often present, and that he is always better immediately after he has fully satisfied his rather vigorous appetite. He dines at 7.30 p m. and is very often awakened between four and five in the morning with heartburn, pyrosis, sneezing, hiccoughing asthmatic attacks or other troubles, which, however rapidly subside as soon as he is able to disperse the wind of which his stomach appears to be full.

In the daytime he is liable to suffer so much from palpitation that he feels sure there must be something wrong with his heart.

The first thing to be done with such a man is to

clear his primæ viæ. He should be given a dose of calomel (remembering that those of dark complexion bear this drug better than those who are fair) he should be ordered a turkish bath, an electric light bath, or an ordinary hot bath and induced, if possible to take some daily exercise in the open air, or at least at the open window The unwisdom of wearing wool or flannel[1] next his skin should be explained to him, and he should be enjoined to masticate his food adequately These and other warnings suggested by the special circumstances of the case must be emphasized, but the great, the paramount, the urgent need in such a patient is for an antacid to be taken either as soon as his symptoms commence or if possible, immediately before their onset.

The antacid which is most popular is the bicarbonate of sodium but this salt is an antacid pure and simple and is possessed of no sedative properties. It also has the disadvantage, especially where flatulence is troublesome of increasing the amount of gas in the stomach. What is required is an antacid agent which is free from this objection which at the same time is possessed of sedative properties. Such an agent is bismuth. There have been many differences of opinion regarding the merits of this drug even so great an authority as Sir William Roberts going so far as to deny that it was an antacid at all. Sir Lauder Brunton, Dr Burney Yeo and other authorities however appear to esteem it very highly

[1] See Chapter VII.

and this view is supported by most of those who have made a systematic trial of its action. The disappointments attending its use in suitable cases have been almost certainly due to its employment in insufficient quantities. The ordinary B.P. doses are utterly useless; the minimum which I employ is of the subnitrate 25 grains (B.P. 5-20) and of the liq. bismuth. ammon. cit. (B.P. 30-60) 2 drachms.

It is these two preparations which I have learned to appreciate most highly. The subnitrate may be given either in cachet form, or suspended in a mixture. When prescribing it as a cachet I generally combine it with that excellent sedative, oxalate of cerium (whose B.P. dose of 2 grains is also ridiculously inadequate) thus:

> ℞. Bismuth subnit. ... ... gr. xxv
> Cerii oxalat. ... ... gr. x.
> M. Sig.: Ter die post cib.

If, as is not infrequently the case, the patient has a gouty tendency it is well to add 5 grains, or a little more, of pulv. guaiaci to each cachet, but it not infrequently happens that the little more is found to produce griping, purging, or both. Another drug which might be added to such a cachet is bicarbonate of sodium. It increases the alkalinity but it increases also the bulk of the cachet and the quantity of gas in the stomach.

Although the subnitrate is frequently prescribed in a mixture (20 grains of the salt to 20 grains of pulv.

tragacanth. co.) it is not wise to do so. The carbonate acts nearly as well, and does not tend to decompose as the subnitrate does. On no account should the subnitrate be placed in a mixture with bicarbonate of sodium. The decomposition of the former leads to CO_2 being evolved from the latter and explosions are apt to occur

If it is desired to give bismuth in a fluid form the liq bismuth. ammon. cit. should be used. I am in the habit of combining it (as in the cachet) with a sedative—i.e., hydrocyanic acid—thus

℞. Liq bismuth. ammon. cit. } ... ... aa ʒii.
Syr pruni virg. }
Aquam ... ... ad ℥i.
Misce.

This makes an agreeable and palatable mixture but if, with a view of correcting any gouty tendency we add, say ʒss. tr guaiaci ammon., we must remember to suspend the latter in 40 grains of mucilage of acacia, and even then the mixture will be deprived of its elegance. There is no objection to adding bicarbonate of sodium to this combination but there is really no necessity to do so, for it is already sufficiently alkaline.

Now whichever form is decided upon the cachet or the mixture the important point to remember is that the proper time for its administration is some time after food. The length of time which should be allowed to elapse between the meal and the taking of the remedy depends, of course upon the size of the meal. A full

meal will take five hours to digest, and will use up a great deal of HCl. A light meal, especially if it be poor in proteids, will use up very little acid—that is why sthenic dyspepsia is so much more common after light meals—and the surplus will want neutralising relatively soon. It will want neutralising sooner after breakfast than after luncheon, and sooner after tea than either. After a full dinner the symptoms frequently do not show themselves until about 4 or 5 a.m., and may then, in addition to pyrosis and heartburn, take the far more obscure forms of hiccoughing, sneezing, asthmatic, and even anginal attacks. The tendency of any symptoms, however little connected with the stomach they may at first sight appear, to recur regularly at 4 or 5 a.m. should give rise to a suspicion that dyspepsia is at the root of the mischief.

It is probable that much of the success which has attended the practice of giving alkalies before meals has been due to the fact that the period immediately preceding one meal is the period which witnesses the close of the digestion of the last—the period that is, in which there is surplus acid waiting to be neutralized. However that may be, there can be no doubt that the administration of alkalies, and especially of bismuth, at a suitable interval after food offers a means of relief in sthenic cases which is practically unfailing, and I would go so far as to say that if relief is not obtained by such means, then the case is certainly not a dyspepsia of the class under consideration.

A line of treatment suggested, or at any rate recommended, by Sir William Roberts is that of prescribing lozenges to be sucked by the patient as soon as the symptoms have developed. Lozenges have the advantage of portability and the sucking of them insures that the superfluous acid in the stomach shall be neutralized by its physiological antidote, namely saliva. It is curious to note that the saliva secreted during a sthenic dyspeptic attack is hyper alkaline. It is as if Nature herself were suggesting the best means of curing the condition, for not only is the reaction enhanced, but the amount of the fluid is markedly increased in those attacks which the presence of pyrosis and coryza proclaim to be of more than usual severity

The lozenge which Sir W Roberts prefers is the trochus. bismuth. of the B P., which contains 3½ grains of chalk and 2½ grains of carbonate of magnesia but, true to his disbelief in bismuth he suggests that this ingredient should be omitted. However so long as the lozenge is not acid it probably matters little of what it is composed. The efficacy of this line of treatment resides in the use which is very properly made of the alkaline saliva in neutralizing the offending acid. Even the mechanical irritation of a clean pebble carried in the mouth is useful in this direction, and patients should be told to remember it in the presence of an attack where no alkalies are at hand.

There is a point in prophylaxis which ought always to be brought to the notice of a sthenic dyspeptic.

The source of the muriatic acid present in the gastric juice is believed to be common salt patients should, therefore be told to eschew salted meats and be warned to relinquish the habit of adding chloride of sodium to their food. It is merely a habit, and few have any difficulty in relinquishing it. If the supply of the raw material is checked the over production of the manufactured article will cease

And this consideration carries another lesson, which is this The natural mineral waters which are so largely imported into this country have justly earned for themselves a great reputation in the treatment of chronic and occasional constipation As nearly all these waters contain chloride of sodium, and some of them in very large quantities, it is inadvisable to recommend them to patients whose constipation is associated with sthenic dyspepsia. To relieve the difficulty in such cases recourse must be had to other means Cascara is very serviceable, but I prefer either of the following given three times daily before meals followed by a glass of hot water

℞.	Sodii sulphat.	..		.. gr xxx.
	Sodii bicarb. ...	...	..	.. gr x.
	Tr. nucis vom.		..	♏v
	Ess. menth. pip.		..	♏ii.
	Inf. gent. co. ..		...	ad ℥i.
		M.		

℞.	*Magnes. sulphat.*	..	...	.. gr xxx.
	Magnes. carb.		...	... gr x.
	Tr nucis vom.	..	...	♏v
	Ess. menth. pip.		..	.. ♏ii.
	Inf. cascarillæ	...	...	... ad ℥i.

Either of these mixtures takes the place of that containing sodium bicarbonate suggested above for lavage of the stomach, and if persevered with, may be relied upon to dispose of the constipation.

Among those who suffer from sthenic dyspepsia, there are a very large number of people (mostly maiden ladies and widows) who are persuaded that they want supporting that their condition is due to debility and that large and frequent meals are essential to their continued existence. Their miseries towards the end of digestion, and the prompt relief which is afforded by another meal, lend an amount of support to this view which no skill in the art of persuasion is in some cases sufficient to combat. If the real state of affairs is pointed out to them they write the doctor down as an unsympathetic person, who is devoid both of perception and therapeutic instinct. Nevertheless, the attempt should always be made for it is better to lose a patient than to share in the responsibility for the arterio-sclerosis and other serious manifestations which sooner or later provide a fitting Nemesis for these misguided people.

And this leads me to say that mistakes in differentiating between the two kinds of dyspepsia generally take the form of diagnosing as an asthenic case one which is in reality a sthenic case. Patients who pity themselves readily dwell upon the weakness which they feel, and believing their symptoms to be due to debility seek, by graphic and heartrending descriptions to persuade the doctor to the same view

This is a pitfall against which it is very necessary that we should be on our guard. When there is any doubt about the nature of the case, it should be treated as if it was sthenic, by the exhibition of alkalies and sedatives. The reason for this is that alkalies and sedatives, though they may do an asthenic case no good will certainly not aggravate the symptoms whereas acids given to a sthenic dyspeptic immediately give rise to an acute exacerbation of all the troubles from which he was previously suffering

There is one other point to remember in this connection and that is the futility of treating sthenic dyspepsia by any remedies directed to the stomach alone until we are *quite certain* that the *cause of all* the trouble does not lie in the transverse colon. When we recall the anatomical relations of this portion of the large intestine to the great curvature of the stomach, it is not difficult to believe that an irritation which has its source in the one will be readily communicated to the other and I have *repeatedly* found, clinically, that a dyspepsia of the sthenic type, which had resisted every combination of alkali and sedative, responded promptly to calomel and an enema properly administered.

Sir William Roberts divided the dyspepsia of *substantially healthy people into the atonic form and* the *irritative* or *acid* form, which is practically the same classification as that which is here advocated. Of the latter form he writes fully and instructively

but with the bias natural, perhaps, to one who has suffered much from one form, he dismisses the other the atonic, in a few words as scarcely meriting the name of dyspepsia. From this view and from the theory which would confine the term irritative to either form I must express my dissent. Atonic or asthenic dyspepsia—the dyspepsia, that is, whose essential condition is a deficiency of HCl in the gastric juice—is an exceedingly common condition more especially among the working classes and among neurotic people of all classes, and the symptoms which such cases have in common with sthenic dyspepsia, the discomfort and the flatulence—albeit brought about in the one case by excess of acid and in the other by the presence of undigested food—are due to precisely the same condition, namely an irritable state of the gastric mucosa.[1]

This element of irritation which the two forms have in common is important because failure to appreciate it seems to lie at the root of much of the confusion which prevails on the subject. Where the symptoms of the two forms seem to overlap they do so on account of this factor and its results, and when this is clearly understood the difficulties disappear

Let us now look at a typical case of ASTHENIC DYSPEPSIA, and consider how it should be treated. The causes which may produce the condition are

[1] I purposely refrain from any discussion of the fermentation theory for even if there be any truth in this theory which I doubt, it cannot affect the above considerations.

numerous, and some of them are remote Settin aside those which are obvious, such as convalescenc from acute disease it is well to remember that any thing which gives rise to a constant leakage o nervous force is peculiarly liable to set up an astheni dyspepsia. Such conditions as worry uncongenia surroundings, nasal obstruction, and errors of refrac tion are among the most frequent, and it is safe t say that they are precisely those which are mos commonly overlooked.

Let us then, take as our type a married but child less woman of thirty who is not exactly unhappy but who has no definite object in life She is lacka daisical rather than melancholy with a dull com plexion and spare frame Her tongue is clean but pale and flabby and some of her teeth are defective She complains of a dull pain in the chest, which passes through to the back. The pain is always more or less present, but every meal, no matter whether it be large or small, intensifies it. She has very little appetite as a rule though occasionally when she forces herself to eat, it seems to improve after she has taken a few mouthfuls. She suffers from flatulence and palpitation, and is generally very constipated. Medicines may relieve the constipation, but they generally leave the discomfort and the flatulence unaffected. On examining her abdomen, we may find a movable kidney on the right side and the muscles in the anterior abdominal wall will be found to be badly developed. She takes very

little exercise, and protests that she never feels up to it.

The treatment of such a case is not difficult. Having freed the primæ viæ and attended to the other details already mentioned as suitable to both forms of the malady we turn to the measures of active treatment. Having regard to what we know to be the essential condition in this case—namely deficiency of HCl in the gastric juice—the *first indication is, clearly to supply the deficiency* And in doing so we must be careful to give doses large enough to effect our purpose. The ordinary B P dose of ♏x. is altogether inadequate the minimum dose which I employ is ♏xxv This it is well to combine with strychnia and pepsin, as in the following

℞. Acid. mur dil. ... ... ♏xxv
  Liq strychnin. ... ... ♏v
  Glyc. pepsin. ... ... ʒi.
  Aq menth. pip. ... ... ad ℥ss.
M. Sig : Thrice daily immediately after food.

To such a mixture may be added other drugs which the nature of the case may seem to demand. Quinine hydrochlorate liq ferri mur liq morph. mur., and liq arsen. hydrochlor are all of them preparations which are frequently of great assistance in such cases and all of them are quite compatible, not only with each other but also with the other ingredients in the mixture. The most useful of them is perhaps the morphia salt. In cases of long

standing where the element of irritation is consequently very pronounced, the addition of ♏x. of the liq morph. hydrochlor is invaluable. It soothes the mucosa and enables it to tolerate the stimulating effects of the HCl and strychnine which in its absence are liable to cause so much local disturbance as to bring the patient back with the complaint that each dose of the medicine aggravates her sufferings. It is scarcely necessary to dwell upon the great importance of deleting this ingredient from the prescription as soon as there is any prospect of doing so with impunity

For the constipation which is generally so prominent a feature in asthenic dyspepsia, the use of the natural mineral waters is not only unobjectionable—it is strongly indicated. The presence in them of common salt, which we have seen to be a contra-indication in sthenic dyspepsia, is here an advantage. Most of these waters are best taken in the morning (fasting), and their effect is enhanced by the association with each dose of a tumblerful of hot water

Such are the broad lines on which most cases of functional dyspepsia should be approached. But even in uncomplicated cases it is more easy to make mistakes than the facts as above stated would lead one to expect.

It not infrequently happens that where there is a serious difficulty in coming to a conclusion as to whether the case is one of sthenic dyspepsia or its

opposite, it eventually turns out to be one which cannot, properly speaking be placed in either category but is due to some underlying cause which must be discovered and removed before either acid or alkali will have the desired effect. A large percentage of these aberrant cases are the result of causes which, for the want of a better term, we must call nervous or neurotic. Common instances are afforded by men on the Stock Exchange who lead strenuous and even exhausting lives, who are exposed to periods of depression, varied by sudden volcanic explosions of excitement and panic, in whom the philosophic calm so necessary to good digestion is hardly ever obtain able except at a foreign health resort, where telephones cease from troubling and markets are at rest. An instance drawn from another though scarcely less familiar sphere is presented by a young lady who once consulted me, with all the signs of asthenic dyspepsia with this notable point of dissimilarity from the typical picture that her acid symptoms began to trouble her as soon as the food obtained access to her stomach. The ordinary prescriptions of bismuth, soda, and hydrocyanic acid in combination with laxatives produced no result, and so at her third visit I got her mother out of the room and demanded to know the nature of the silent sorrow which I felt certain she was nourishing It soon emerged in the shape of a secret engagement, which, should it leak out, would set the whole family by the ears. The combination of 15 grains of bromide of

potassium and 2 minims of Fowler's solution in water three times a day after food, coupled with a little worldly wise advice, cured that dyspepsia in a few days.

One of the most common causes of aberrant dyspepsias is that which, for some extraordinary reason, is the one most commonly overlooked. So common is it, indeed, that one feels almost ashamed to mention it. I mean dental caries. The teaching of the schools—and I say this without any implied reflection—tends to the too exclusive cultivation of the obscure in diagnosis and the heroic in treatment, with the sad result that the obvious and common sensical become overlooked. Thus it happens that patients are suspected to be suffering from cancer gastric ulcer œsophageal stricture hepatic, pancreatic, and even splenic, disease when a few visits to a competent dentist will cause the disappearance of all their symptoms. We talk glibly of the gastro-intestinal toxins and their nefarious consequences, but we appear to think of them as lurking brigand like, in the inaccessible *rugæ* of the small intestine when their real habitat is the commonplace cave of a decay ing molar That washing in Jordan should never be a popular proceeding with patients is comprehen sible because patients are generally in an epic mood but why doctors should avoid it as a prescription is less obvious. That the avoidance frequently impairs professional credit is a matter of common experience.

Another condition which is very closely associated

with intractable dyspepsias is nasal obstruction. No one can pretend that a nasal obstruction due to adenoids is now in danger of being overlooked The very reverse is indeed the case, for adenoids are diagnosed, and even operated upon, in cases when they do not and never have existed. But that is by the way Nasal obstruction may be due to causes other than adenoids, and such obstruction is a very common provoker or maintainer of a dyspepsia which fails to conform to either of the two regular types, and remains obstinate to treatment by their appropriate remedies. Such was the case with a man whom I have known for many years, energetic, hard working capable, who at unequal intervals suffered from attacks of what both he and I agreed to call gouty dyspepsia. It was distinctly of the athenic type, and the worst discomforts connected with it scarcely ever failed to yield to bismuth and soda. Nevertheless even when taking the medicine he was seldom entirely free from flatulence eructations, heartburn and constipation The enemy was always on his flank, to fall upon him unmercifully should he commit any dietetic indiscretion, or in the event of any extra pressure of work, and on the occasion of any mental anxiety Matters continued thus for several years until he was married. Not long after that event he came to see me with one of the usual attacks, and told me incidentally that his wife complained that he not infrequently snored and that in connection with his complaint on her part, he had

himself noticed that he always awoke with his mouth open. I then, for the first time tested his nasal air way, and *found that it was practically blocked* on the right side by a combination of spurs and a deviated septum. Since this condition was relieved, now over *two years ago he has never had any return of his* trouble or if he has, it has been so slight in degree as to be readily amenable to ordinary treatment. This may seem an inconclusive story but both he and I are quite convinced that the cause of his former troubles was the obstruction in his nose, an opinion which on my part is very strongly supported by other cases of a similar kind.

But if nasal obstruction is a common cause of obstinate digestive troubles, an even commoner cause is to be found in uncorrected errors of refraction. These errors give rise to eye-strain, and eye-strain in its turn provokes disturbances which are by no means limited to the eyes or their neighbourhood. The teaching of too many of the schools is to the effect that unless a person with a slight error of refraction complains of definite symptoms, then it is a work of supererogation to correct it. Such advice might be sound if all the symptoms of eye-strain were easily recognisable as such but they are not. A person *who is the subject* of eye-strain may suffer from symptoms which neither he himself nor the vast majority of doctors would *dream of referring* to his vision.[1] It is begin

[1] See Ernest Clarke, The Medical Aspect of Eye-Strain, *Clinical Journal*, October 4, 1905.

ning to be recognised, perhaps, that headaches, supra orbital and other local neuralgias, may be caused by visual defects but it is seldom even admitted that dyspeptic troubles and many obscure and indefinable, but very persistent, miseries, which are either carelessly or ignorantly labelled neurotic, neurasthenic or hysterical, may be due to the same cause. This attitude is not altogether surprising when we remember that, in order to produce these results, it is essential that the defect should be slight in degree should be one that is, which the patient himself by contracting his ciliary muscle, can adequately correct. The grosser errors do not cause these symptoms, for the reason that no amount of ciliary contraction being sufficient to correct them, no effort is ever made In the lesser degrees the effort, being successful, is not only made, but is maintained during the whole of the waking hours. It is this maintenance of muscular effort which is the crux of the whole situation for the ceaseless and illegitimate contraction of the ciliary muscle means an equally ceaseless and illegitimate expenditure of nervous energy The electric power intended for the motors in the various organs is all monopolized by the visual. There seems nothing to determine which of these organs will be the first to cry out that it is being starved of its due amount of nervous energy and much of the trouble arises from the fact that its cry is almost invariably misunderstood and misinterpreted. In the case of the stomach the responsibility is generally placed upon the diet,

which is pared and whittled both in quantity and quality until the fare of King Nebuchadnezzar may seem generous in comparison while the organ itself is now soothed with papaveric caresses and anon chastised with Chilian scorpions in the vain hope that it may thus be induced to make bricks without straw for unless the nervous energy or the motive power or whatever else it may be termed is prevented from leaking out through the crevice of that minor refractive error the stomach will be deprived of its due share of this energy with the result that symptoms in very sooth, though symptoms of an aberrant and baffling type will continue to afflict the unfortunate possessor of the organ, in spite of acid and alkali, and in spite, too of their all too common and ridiculous association in the same mixture.

So impressed have I been during the last ten years with this aspect of obstinate dyspepsias, that I now never fail to satisfy myself, at any rate in the case of a town-dweller and more especially in the case of a town-dweller of over forty years of age that an error of refraction is not at least a contributory cause in the case of troublesome indigestion which resists the ordinary remedies. If it is true, as I believe it to be, that the dentist cures more cases of indigestion than the physician it is equally true that in the same direction the refractionist is more potent than the therapist.

A great many dyspepsias which are confidently assigned to the rubbish heap labelled 'neurotic are

due to vaso-motor disturbances and may thus be held to justify the label. The disturbance may take the form of an undue vaso-dilatation leading to a sub-normal blood pressure or to the opposite condition of undue vaso-constriction causing a supernormal blood pressure. It may of course be the result of faulty distributions of pressure, for which errors of vascular tone are not primarily or even mainly responsible, as in the case of mitral disease. It is scarcely necessary to refer to such cases, because the person who fails to examine the heart in a case of dyspepsia will fail to examine it in a case of chorea, and is diagnostically past praying for. It is the vascular disturbances which own no such obvious cause which give rise to difficulties. In the case of undue general vaso-dilatation the *modus operandi* is not difficult to follow. The patient is, so to speak, living under the constant influence of nitrite of amyl; his peripheral arteries are relaxed and there is thus less blood available for the work of the internal organs. Consequently the appeal for more blood for digestive work on the part of the stomach is very inadequately responded to, and symptoms arise whose severity is in direct ratio with the degree of general vaso-dilatation. A dyspepsia which is due to this state of matters may always be relieved by causing the patient to assume the recumbent posture immediately after a meal, but it can only be cured by removing the cause of the general vaso-dilatation.

The opposite condition of unduly high blood

pressure frequently, if not invariably carries a gastric disturbance of some kind in its train. The causation of high blood pressure in some at any rate, of its aspects is still a matter of speculation, but there seems no escape from the conclusion that it may be, and frequently is, due to endogenous toxins. These toxins would seem in the majority of cases to act slowly—so slowly that the existence of the high pressure is not even suspected until it has left its inexorable mark upon the arteries in some important organ, whose resulting degeneration has produced the symptoms from which the patient seeks relief Here, then is another and by no means the least weighty of the possibilities which should engage our attention where we have an aberrant dyspepsia to deal with. The use of the manometer is becoming more general every day and such cases will therefore be overlooked with decreasing frequency to the credit of the profession and to the satisfaction of the patients.

Of the dyspepsias which result from high blood pressure, the best instance is probably that which may be drawn from a consideration of what occurs at the menopause. The process of menstruation must be regarded as an excretory process, so that the com *mencement of the* climacteric marks as a rule the commencement of a period of insufficient excretion. Add to this the consideration that the internal secretion of the ovary is believed, on sufficient grounds to be both vaso-dilator and a toxin destroyer and it is not surprising to find that at the gloaming of life as

the French poetically call it (*l'âge crépusculaire*) the blood distribution becomes deranged. The derangement shows itself as an elevation which is always definite, and is not infrequently sufficiently alarming to warrant very active interference. For reasons into which it is impossible to enter here this rise of pressure exercises a particularly unfavourable effect upon the vessels in the splanchnic area, and of these vessels it is, as one would expect, the gastric which show the greatest disturbance, with the result that dyspepsia, almost invariably of the sthenic type, is one of the commonest of the manifestations of the menopause. Any attempt to treat such a dyspepsia without very special attention to the state of the blood pressure is to court certain failure and in order to reduce that pressure we must bear in mind the above-mentioned factors in its causation.

The fact that an excretory organ has been lost, and that its absence is not yet compensated for will suggest gentle stimulation of the other emunctories, of which the skin is in this connection by no means the least important. The absence of the internal secretion may be met by giving ovarian extract by the mouth, a procedure which I believe to be of the greatest benefit. Ichthyol in 5-grain pills is also useful and is perhaps the best of all drugs for combating the vague subjective discomforts which are apt to appear at this time. When the blood-pressure is really high—*i.e.*, over 200 mm. Hg—and the above means fail to reduce it, I never hesitate to recommend

venesection. This little operation has in several cases within my knowledge been the means of a 'miraculous cure of very troublesome climacteric dyspepsias.

I feel that I must not leave this question without a reference to a form of dyspepsia which is associated with the menopause but which has none of the characters of that just noticed. The processes peculiar to the climacteric affect different women differently but they seldom fail to produce an instability of the nervous system, which in extreme cases proceeds to definite insanity Short of this, one of the forms which it assumes is an abnormal craving for sedatives and if the craving is satisfied there is very apt to ensue an irritable condition of the stomach, which gives rise to symptoms of indigestion. The sedative usually employed is, of course alcohol, with regard to which it is necessary to remember that its excessive devotees fly to it, not as a stimulant, but as a narcotic and that it is narcotic only when taken in doses large enough to act as an irritant on the gastric mucosa. There is a great deal of secret drinking at the time of the menopause, even among those who up to that period have been strictly temperate so that the possibility of such a factor being at work in producing or maintaining a dyspepsia should not be forgotten

There is a condition which some, at any rate, of the manifestations of sthenic dyspepsia are liable very closely to simulate and to which it therefore

seems desirable briefly to refer—namely *angina pectoris* Where sthenic dyspepsia is associated, as it not infrequently is, with some degree of gastric dilatation, symptoms resembling true angina are by no means uncommon. I have already referred to the fact that attacks of sneezing dyspnœa, and the like, are in these cases very liable to occur in the early hours of the morning and I have pointed out that those attacks are due to the irritation produced primarily by the excess of acid present at the end of digestion.

Now it is not difficult to understand how the consequent flatulent distension of a somewhat dilated stomach will cause serious mechanical embarrassment to the heart, nor that, as a result, symptoms should ensue which are very suggestive of true angina. Add to this the fact that the patient frequently brings a history of pain in the chest, evoked by exertion, which radiates down the arms, and the suspicion of angina is necessarily deepened. It is important to remember therefore that all these symptoms are entirely compatible with functional gastric disturbance and to prevent unnecessary alarm to the patient and his friends, it is well to avoid all mention of the more serious condition until the less serious can be excluded.

There are some facts which may aid us in arriving at a conclusion upon this point, which is liable to present difficulties not only because of the general resemblance between the symptoms, but also

because an attack of flatulence may be the starting point of the first of a series of true anginal seizures. In the first place, then, it may be said that the constant presence of palpitation in association with the attacks is against the suspicion of angina and in favour of simple dyspepsia. In favour of dyspepsia, also, is the regular occurrence of the attacks in the early hours of the morning When inquiry elicits that the pain on exertion occurs always after a meal and never when the stomach is empty the fear of angina may be allowed to recede and it may be dismissed altogether if an antacid taken at a suitable interval after meals is successful in preventing the attacks.

The occurrence of such symptoms however, even when they are quite definitely dyspeptic in origin, should not be too lightly regarded. They are often associated with giddiness and other phenomena which occasion alarm to patients and if the cardio-vascular condition be carefully examined, as it should always be it is very seldom found to be in an entirely satisfactory condition. Setting aside the heart itself whose state, when it is affected at all, is variable, and is always secondary to the changes which are present in the arterioles and capillaries, it is necessary to examine carefully into the state of the arteries. These will generally—one may say always—be found in a state of high tension, and the treatment of the dyspepsia by means of antacids will be only temporarily successful unless means be adopted

to insure that the intravascular pressure be permanently reduced. In order to reduce this pressure it is necessary to realize the nature of its cause. In nine cases out of ten this is the presence of toxins circulating in the blood. The toxins, by irritating the vessel walls cause constriction of the muscular coats, and blood pressure is at once increased. The real nature of the toxins which may give rise to this state of matters is not yet understood but in the cases under consideration—those, namely of sthenic dyspepsia—they are generally if not invariably the result of excessive meat-eating.

The first thing to do then is to impress upon the patient the necessity for abstention from meat foods and the older the patient, and the more sedentary his mode of life, the more urgent does this necessity become. A general reduction of intake, in quantity as well as quality is usually very desirable and in my experience the meal which may be attacked with the best prospect of success is that which is taken at or about midday. This should consist of milk, eggs, cheese fruit, and vegetables—of anything, in fact, which has not been killed—and it should be free from alcohol. So far as the meat at the evening meal is concerned it is well to insist that it should be minimal in quantity white rather than red and preferably boiled because it has been shown that boiled meats are much less liable to increase arterial tension than those which are otherwise treated.

To insure the adequate excretion of such toxins as

may already be present the bowels skin and kidneys must be stimulated. *Mercury is the best agent to* employ for the first of these purposes. About a grain of calomel should be given every night for a week, followed each morning by a saline, and the saline should be continued for at least a week longer Turkish and hot-air baths are useful for cutaneous stimulation especially where they are combined with or followed by efficient massage. Even the ordinary hot bath, properly administered, is by no means without its value in this connection. For the stimulation of the kidneys the salts of potassium are to be preferred and of these the iodide and the citrate are the best. Ten grains of the citrate with 5 grains of the iodide should be added to the mixture of bismuth above prescribed, and the patient should be directed to drink freely of Evian water between meals. Another excellent renal evacuant is theobromine.

The importance of these measures resides in the fact that a sthenic dyspepsia which is accompanied by high arterial tension is but a symptom of an under lying condition whose continuance is fraught with the utmost gravity to the patient. There is as a rule no difficulty in curing the dyspepsia but if we allow our selves to rest satisfied with such an achievement, and shut our eyes to the possibilities of dangers ahead—dangers such as granular kidney and general arterio-sclerosis, which are two among many of the logical issues of sustained high arterial tension—the patient will have good cause to regret the promptitude

and completeness of the relief from his dyspepsia which he has obtained at our hands. This is the condition to which the term gouty dyspepsia has been applied and if we use the term to denote a dyspepsia of the sthenic type which is merely a manifestation of a general condition of goutiness which general condition demands our attention even more urgently than the dyspepsia, then the term is altogether unobjectionable. There is however very little advantage to be gained from the multiplication of adjectives.

Symptoms are often confidently attributed to dyspepsia which are in reality due to *ovarian irritation*. The dyspepsia is generally of the asthenic type and is usually accompanied by nausea, frequently by vomiting which may be very persistent, and occasionally by hæmatemesis. When a dyspepsia in a young woman proves intractable to the ordinary remedies the probability is great that the cause will be found in the ovarian region. To the seeing eye there is something very characteristic in the appearance of one who is suffering in this way The appearance does not lend itself to verbal description, but, when once observed, it is not easily forgotten. Undue brightness of the conjunctivæ in a person whose temperature is normal is very suggestive of pelvic disturbance but this by no means exhausts the elements of which the ovarian look is composed. If the existence of this possible cause of an indigestion be borne in mind it is easy to verify our suspicions. Palpation over the ovarian regions will elicit tender

ness, sometimes very extreme on one or both sides The best treatment consists in the repeated application of small blisters over the congested viscus combined with free purgation and the exhibition of bromide of potassium. This kind of dyspepsia is frequently referred to as 'nervous' or neurotic. It is not, of course, a dyspepsia at all. It is due to causes local to the pelvic organs, and unless these causes, which not infrequently comprise leucorrhœa and menstrual disturbances, are *suitably treated*, the remedies offered to the stomach will be wholly ineffectual.

There are two symptoms commonly associated with dyspepsia which, from the discomfort to which they may give rise it is often necessary to treat during the interval which may have to elapse before their cause can be removed the one is flatulence the other is hiccough.

FLATULENCE may be either gastric or intestinal. The former is said to be due to fermentation in the stomach itself Although there is good reason to believe that this is not the case, there is no doubt that the symptom is one which is nearly always present in every case of gastric derangement, *from whatever cause arising*. It may on the other hand, be a pure neurosis and is frequently provoked by worry and anxiety In neurotic subjects and in mouth breathers (as in the subjects of adenoids and deviations of the nasal septum) it is due to the swallowing of air When this symptom is so

obtrusive as to demand treatment apart from its underlying cause, there are three remedies which can usually be trusted.

To those who believe in the fermentation theory, carbolic acid, 2 grains, made into a pill with 1 grain each of liquorice powder and powdered althea, and given three times daily will probably appeal, and it certainly is often very helpful. In the form of sulphocarbolate of sodium (10 to 15 grains) the same remedy may be added to mixtures prescribed for the relief of the complaint which causes the flatulence. The sodium salt sometimes acts better than the pure acid.

An old and very reliable remedy is charcoal. This should be given in doses of at least a drachm three times daily The drug which has seemed to me to be most trustworthy however is terebene 10 or 15 drops may be put upon a lump of sugar for the patient to suck, or the same quantity may be given in a capsule three or four times a day Whether by checking fermentation or by some other action it is certain that few remedies possess so much power in relieving the distressing eructations to which some dyspeptics are liable.

Where the flatulence is intestinal, the treatment should be directed towards increasing peristalsis by means of nux vomica and belladonna. The condition is generally associated with atony and care should be taken not to administer drugs, such as magnesium sulphate, which increase the fluid contents of the bowel without increasing peristalsis, unless the muscular

Ext. ergot. liquid in drachm doses, frequently repeated, has been very successful in some cases, and is always worth a trial where other things fail. It is generally conceded that morphia, chloral, bromide of potassium, and even the inhalation of chloroform, are useless. Ether by the mouth however sometimes proves effectual. Traction on the tongue will sometimes produce the desired effect. *Forcible holding of the breath in deep expiration is useful in slight cases, as is drinking a glass of water with both ears and nostrils closed.* Of all these means, however, nitro-glycerine is the most likely to be successful.

Musk (5 to 10 grains) in a pill with liquorice may also be tried. It is well spoken of by many the only objection to its use being its great expense.

ADDITIONAL FORMULÆ.

Alkaline Mixture (Byrom Bramwell).

℞. Potass. bicarb. } Sodii bicarb. } ... ... āā ʒiii.
Spts. ammon. co. ... . ʒiv
Tr. rhei ... ... ʒii.
Inf. calumbæ ... ... ad ℥vi.

M. Sig.: ℥ss. in water thrice daily a quarter of an hour before food.

Mixture for Flatulence

℞. Menthol .. .. gr. ½
Spts. ammon. co. } Spts. chlorof. } ... . āā ℥i.

M. Sig.: One teaspoonful in water when required

CHAPTER III.

CONSTIPATION DIARRHŒA, VOMITING AND GIDDINESS.

CONSTIPATION may be described as inadequate discharge of the contents of the lower bowel a definition which assumes, of course that there is material in the lower bowel which is improperly retained. This is a fact which seems to require emphasizing for the reason that the term constipation is often made to include infrequent defæcation in people with whom such infrequency is habitual and normal. It is well to remember that the amount of fæces represents the excess of material consumed over what it is possible for the economy to utilize and that consequently if people took no more food than was necessary to their continued existence the amount of fæces would be practically nil. There are persons—not very forceful persons perhaps, but still perfectly healthy persons—who are very spare eaters, and who are, in addition very careful eaters, in the sense that their food is thoroughly masticated, whose bowels do not act more than once a week. If we were to gauge the matter only by the standard of the practice of the

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Mixture for Flatulence.

℞ Menthol ... . gr ¼
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vast majority, this would seem absurdly and even dangerously inadequate, and yet the infrequency of the discharge in such cases, as being in consonance with the small amount of intake, must be regarded as natural to the physiological working of the individual, and, *as such, not lightly to be interfered with.* These people are, however, not ordinary people, and though it is wise to remember not only their existence, but also the physiological lesson of which they present living examples, it would be foolish to accept them as a standard by which to measure the practice of the majority

The ordinary individual does not regard his diet from the standpoint of mere existence he likes a balance on the right side and is consequently in the habit of eating more, both in quality and quantity than his system can possibly make use of. The excess in quality supplies him with a stimulant which he enjoys, which, indeed, he may even find necessary *to the accomplishment of his daily work* the excess in quantity is a mere accident, as it were, a con comitant of the excess in quality which he takes because it is part and parcel of *the things he likes.* This excess in quantity consists of what has been called ballast—material, that is, which he cannot digest, because it is indigestible by nature, *material* such as vegetable fibre and other constituents of food over which the digestive ferments exercise no dissolving influence It is of the excess in *quantity* thus constituted that the fæces are for the most part

composed. Some of the excess in quality—a portion that is, of the material which is by nature digestible—also enters into their composition especially when that excess is very conspicuous but the discharged matter as a rule consists of material which has escaped digestion, not because the digestive organs are at fault, but because the material itself is insusceptible of solution and conversion into chyle. It is the inadequate discharge of this material which constitutes the condition which we are now considering

It will be convenient to spend a moment in tracing the course of the excess in quality and to inquire what becomes of the soluble material which is consumed, even though it is not wanted and cannot be utilized. Some of it doubtless becomes entangled in the indigestible residue and under favourable conditions is harmlessly discharged. The greater portion, however is metabolized and ultimately finds its way into the blood. Nature's processes being essentially thrifty the excess is not immediately thrown away it is stored for use on a rainy day as it were and is deposited as adipose tissue in various parts of the body There is reason to believe that the process of this manufacture of fat, at any rate after a certain quantity has been deposited is attended by by products which exercise a very deleterious influence on the economy and give rise to gouty rheumatic, and kindred manifestations The bearing of this upon the subject of constipation is this that not only the original excess itself but

also the by products, have infinitely less chance of escape if the fæces are unduly retained.

Constipation may be either occasional or habitual. The former is seldom important, except in so far as it tends to lead to the latter, and thus it does more often on account of its injudicious treatment than for any reason inherent in the condition itself. From the fact that there are so many remedies for it on the market, which are always given an extended trial before recourse is had to medical advice, occasional constipation is a matter about which a doctor is not often consulted He may, however, be consulted about conditions which are directly due to a loaded rectum, though the cause is unsuspected by the patient. Diarrhœa is one of these hæmorrhoids is another, but perhaps the most common are un defined digestive disturbances. It is also well to remember that a loaded rectum may be the deter mining cause of an asthmatic attack a hysterical fit, an epileptic seizure or of some even more obscure reflex manifestation, and that the nervous instability which these things denote will remain obdurate to treatment unless the simple, but easily overlooked, cause be removed.

Three remedies stand pre-eminent in the treatment of occasional constipation of this sort, and with regard to them, it is well to state at once that their use in habitual constipation is as futile and injurious as their employment in occasional constipa tion is desirable and successful. The first is castor

oil, the second calomel, and the third a soap-and water enema Castor oil is a simple aperient, which generally acts without griping and may safely be given to people of all ages. The great drawback to its use is its nauseous taste, to overcome which various so-called tasteless oils have been placed on the market. With regard to these, it must be remembered that, to be efficacious, very much larger doses are necessary than in the case of the ordinary oil and that none of them is quite tasteless. In order to avoid the taste, in so far as it is possible to do so the dose of the ordinary oil should be given in milk, with which the rim of the glass has previously been wetted If in the drinking care is exercised not to allow the oil to come into contact with the teeth—if that is to say the dose is tossed off —the unpleasant taste is slight and transitory Ringer says that a mixture con sisting of castor oil, ½ ounce fresh mucilage of acacia, 3 drachms distilled water 5 drachms with, say 3 drops of oil of peppermint, has very little taste.

Calomel is rightly considered the best purgative we possess, mainly because in addition to being a purgative it is an intestinal antiseptic of the highest value. The mistake which is commonly made in connection with it is that of giving it in large doses—i e 2–5 grains. It effects its purpose much more satisfactorily if given in quite small doses say ½ or ¼ grain, repeated every four hours until the bowels act. In this way it remains much longer in the

intestinal canal, and its antiseptic properties have therefore an opportunity of exercising their beneficent effects. The importance of these properties in the treatment of occasional constipation does not seem to be realized people appear to imagine that purgation is of itself an antiseptic measure. Such it may be, but very often it is the reverse. *Fæces which remain* a long time in contact with the colon become quiescent, but as soon as they are disturbed by a purgative their toxins are set free, and unless the purgative contains the means of counteracting the effect of these toxins, it may do a great deal of harm. Calomel being the most reliable of all intestinal antiseptics, and a hepatic stimulant to boot, it is infinitely the best agent for occasional purgation. As a rule, it is advisable to follow an evening dose of calomel with a morning dose of aperient water

Where it is desired to wash out the lower bowel without unduly stimulating the small intestine, or where the object is to hasten the action of a purgative given by the mouth, a soap-and water enema is an excellent measure. For reasons just referred to however it is always well to add an antiseptic to the enema, and one of the best for this purpose is oil of eucalyptus, 4 or 5 drops of which should be well agitated with the soap and water before administration.

There is one practical point in the giving of an enema to which I should like to direct attention. Everyone knows that the fluid should be about

100° F., and everyone is aware that the success of the operation depends upon its being performed very slowly but very few seem to realize either that the nozzle of the ordinary syringe is about the worst that could have been devised for its purpose or that a very efficient substitute is very readily obtainable The ordinary nozzle is too short, so that, in order to prevent the regurgitation of fluid the disc which separates the nozzle from the tube has to be firmly pressed against the anus, a process which may give rise to considerable pain. This nozzle should therefore be removed, and an ordinary No. 12 gum-elastic male catheter be put in its place. The bone rim at the end of the catheter is almost an exact fit for the rubber of the syringe and will retain its place without wire or cord. The catheter thus attached when warmed and oiled, makes an admirable nozzle It is introduced without pain, it reaches well up to the sigmoid flexure and, if the patient's pelvis is elevated as it should be, the fluid shows no tendency to regurgitate.

So much then for occasional constipation. We now pass to the consideration of the far more important subject of habitual constipation. Of this condition I would like to affirm at the outset that it is in the vast majority of people a malady which is eminently and easily curable, provided that it has not been long enough in existence to cause gross alteration in the anatomical relations of the parts and the persistence of this alteration by the forma-

tion of adhesions kinks and bands. It is not, a rule until middle age is reached that chronic co stipation becomes incurable by medicinal mea And, although it is one of the commonest and m curable of maladies it is, unfortunately true th it is the one that is least often cured that it allowed to remain one of the chief scourges of o present civilization, vying even with alcohol a *syphilis in the multiplicity of its consequences a* their magnitude That it can be made to rank wi the two latter is due to the fact that like them *supplies a toxin to the blood which so befouls* the tissues as to render them suitable breedin grounds for all kinds of microbes The poison wea down the normal *defences* and allows the enemi to enter to flourish, and abundantly to multiply

Why it is that civilized man should be a const pated animal is a question that requires answerin And the answer is not in truth very far to seel It is this Civilized man eats too much thinks to much and *sits too much* *Also* he uses a wate closet. Uncivilized man hunted his food, and th justified its consumption. He frequently faste either actually or relatively The *hunting kept h* abdominal muscles in good order and he slept, as child sleeps prone and fatigued. Civilization, nc altogether devoid of *advantages is, physiologically* full of drawbacks. The control of the lower centre by the higher is essential to social life it is the pivo round *which the community revolves*, and the dis

gusting act of defæcation is very properly the first to be brought under the iron heel of propriety

Very early in the life of the child the control centres are invoked and defæcation which in strictest physiology should occur after each meal—that is, at least thrice daily—is severely battened down until it reaches the level of a grudging diurnal concession to lower things. Then come social scholastic, and other exigencies the control is still further developed, until at length the control attains such complete mastery that the tail restrains the whole dog Such is the foundation the super structure erects itself.

This hypertrophic development of the control mechanism is the cause of all the trouble In very early days when the child is still on the level of the *pot de chambre*, he is discouraged from using it too frequently Then he is promoted to the water closet, to poise himself on the seat of which is to him all the more an acrobatic feat, because his instinct tells him that to fall backwards into that seemingly bottomless pit would be the end of all things. Then come the school-days and the necessity for regulating and still further controlling the excretory act. Boys are not encouraged to void their excreta and girls are often positively discouraged. You must not give way to those feel ings you must learn to control them Alas! she proves all too apt a pupil The control attains not only to mastery but to despotism, and the healthy

clean-skinned adolescent rapidly becomes the sour smelling and sour tempered adult.

If peradventure such a victim of custom and *les covenances* should at this point come in contact with a medical man who has not been impervious to the gospel according to Arbuthnot Lane he may still find salvation. But even so with reason and good advice to guide him in comparison with the savage he finds himself handicapped Many a time and oft he would like to but cannot letting I dare not wait upon I would and even when he can, he is still surrounded by enemies. The chief of these is the modern water-closet. Savage man per force adopts the crouching attitude normal and necessary to complete emptying of the lower bowel and he has only to turn round to assure himself that the bowel is indeed empty that the tribute of the descending colon is really sufficient to lighten the burden of the day's work and that he is so to speak a free man. The beneficent psychic effect produced by the sight of a generous stool cannot be overestimated. It turns a melancholy man into a joyous one it makes the timid courageous and the lazy energetic Now the modern water-closet, for all its sanitary perfection *vis-à-vis* the community is grossly defective *vis-à-vis* the individual, because it deprives him of the mental stimulus of the uplifting vision afforded by the result of his peristaltic labours Nor is this its only crime. That its fathomless depth should deprive man of the satis-

faction of ocular appreciation is bad but it is almost worse that its height from the ground should paralyze his abdominal muscles. These muscles are little enough exercised by sedentary man but when seated on the ordinary everyday water-closet, he could not exercise them even if he would A chair or a tall footstool may find him salvation by raising his knees, but if the basin itself were properly constructed, these adventitious and easily neglected aids would not be necessary The Jennings, the Doultons and the other practical sanitarians who have placed this generation under real obligations should extend their energies to the standardization of a rational and physiological closet.

And what, in this connection is meant by the term a sufficient evacuation ? The reply to this question given by a sergeant to a medical officer is worthy of record. What do you mean by a good rear ? The answer was prompt. Twice round the pan and pointed at both ends Such no doubt, represents an occasionally attainable ideal to the man who pays his homage to Cloacina but once a day But the man who knows has an ideal at once more attainable and more workable he solicits the goddess at least twice daily and careful though he be of the nature of his matutinal offering, it is to the vespertinal that he attaches the major importance Then, freed from the press and distress which pursue him by day he learns to lay his willing latria leisurely leniently and lavishly at her gracious feet

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On the *question* of the mechanism of normal defæcation Professor Arthur Keith shed a flood of much needed light in his Cavendish Lecture.[1] Therein he showed that the intestinal tract has several bundles in many ways comparable to the bundles in the wall of the heart which originate the rhythmical contractions of that organ. The matter is best stated in Professor Keith s own words In *passing along the alimentary tract food is propelled* through a series of zones or segments, each furnished with its own pacemaker and its own rhythmical con tractions In the heart we find two such zones, an auricular and a ventricular in the normal heart the sino-auricular node is the master pacemaker But a block or imperfection in conduction may occur between the two zones of the heart, with the result that back pressure —a *venous stasis—is produced.* Now seeing the similarity between the cardiac and alimentary motor mechanisms we do not seem overpresumptuous if we suppose that irregu larities may occur in the nodal and conducting system of the alimentary canal—irregularities of the same kind as are known to occur in the heart When such irregularities or blocks do occur we should expect to find them at the points where one rhythmical zone or area passes into the succeeding zone That is exactly what we do find. We find a block *where the œsophagus joins the* stomach we find another where the gastric zone ends and the

[1] *Medical Press and Circular* July 28, 1915.

duodenal begins we find it where the duodenal zone passes into the jejunal, and where the jejuno-iliac passes into the ileo-colic. We find a block may occur at any point of passage from a lower to a higher rhythm At several of these junctional points sphincters are situated, and I do not deny that the mechanism of such sphincters may become disordered and cause alimentary stasis, but it will probably be found that a disturbance in the action of a sphincter is secondary to a disturbance in the excitability and action of the whole rhythmical zone or segment to which it belongs.

Further it is clear that to obtain an orderly propulsion of the food along the whole length of the alimentary canal those various rhythmical zones must be closely co-ordinated in their action and there is a growing body of evidence both experimental and clinical, that points to a very close co-ordination by means of a complicated system of reflexes Disturbance in any one segment upsets the rhythm in all the segments. Bayliss and Starling observed that distension of the duodenum inhibited the action of the ileum surgeons are familiar with the fact that a duodenal disturbance upsets the rhythm of the stomach. From the facts already mentioned it is easy to see that disturbance in the excitability and rhythm of the pacemaker of the cæcum will be reflected to the lower ileum One can understand on the hypothesis I place before you how stasis in the great bowel may be followed

know what throws them out of gear We know how Lane s kinks and the controlling appendix act in producing intestinal stasis but we do not know why they themselves are produced The method of their mechanical production has been shown us, and shown us in a manner so lucid and convincing that the dullest may see and believe but the predispositions which lead to this mechanism still lie hidden in a closely sealed book.

Nevertheless, we have some empirical knowledge of the action of drugs in the treatment of constipation which when applied with judgment, insight and some accessories enables us to do a great deal to fulfil the two main indications The question of the second indication the nullification of the toxæmia *is one to which but very scant courtesy was* paid until it engaged the attention of the vaccinating bacteriologist If this eager truth-seeker has done little else of value he has at any rate taught us not only the real importance of but the possibility of attaining to something in the nature of relative intestinal cleanliness. That this may be assured by means *less complicated than the preparing* and inserting of vaccines does not detract from the merit of the vaccinator Of these means one of the best is the regular exhibition of paraffin oil The oil is said to be a laxative which no doubt it sometimes is but its beneficial effects upon the whole organism can scarcely be due to its very moderate power in *this direction Exactly how it behaves is*

not easy to say but it probably prevents the large intestine from absorbing undesirable matters by blocking the mouths of the glands and by dissolving and carrying off toxins both liquid and gaseous it reinforces the natural defences against toxic invasion.

Paraffin oil should be as viscid as is consistent with the fluid form—that is to say it should have a specific gravity as near 0·890 as possible. The pure oil is quite tasteless. There are however some people who object to its consistency in these cases there is no objection to combining it with other substances such as malt so as to form a powder or emulsifying it with acacia, which is done in some deservedly popular preparations To combine it with active drugs such as iron or the iodides is a mistake No good is gained and the issue is obscured In connection with paraffin there are two warnings which should be laid to heart The first is that if it passes through the intestines so as to reach the outer world in a form still recognizable as paraffin oil the fact must be taken as an indication either that the dose is excessive or what is more frequent, that the oil is insinuating its way past an obstruction which it is unable to move onwards In the one case the dose must be decreased in the other a purgative such as calomel is necessary The second warning refers to the power as a solvent which the oil possesses, a power which necessitates caution in prescribing it together with other drugs.

One of these is thymol which from the fact that it is a very good intestinal antiseptic might easily be prescribed to be taken in conjunction with the oil if this warning were not heeded. The symptoms of thymol poisoning thus induced by a very moderate dose are very unpleasant and alarming A warning of another kind in *connection with paraffin* is one which should always be given to a patient who is about to take it for the first time It is that paraffin oil leaks through the anal aperture often in such quantities as to soil the linen and even the outer garments without the victim being cognizant of its passage Omission to issue this warning has been known to bring the patient back to the prescriber with a burning fire on her lips and a dressmaker's bill in her hand.

There are several drugs whose claim to act as intestinal disinfectants is generally admitted, and there are many more whose obscure but beneficial effect upon the organism generally is probably due to an underlying disinfectant power either in the intestines themselves or in the blood-stream Of the latter quinine may be taken as example. Of the former thymol has already been mentioned. Thymol is an intestinal antiseptic of undoubted potency which if certain precautions are observed, may be given in much larger doses than those suggested by the Pharmacopœia (½ to 4 grains) Inasmuch as it is very soluble not only in paraffin oil but in castor oil olive oil, and oil of turpentine, these oils

should not be given at the same time as the thymol It is also very soluble in alcohol ether and chloroform so that mixtures which contain these should be avoided If these facts are borne in mind thymol in powder enclosed in a capsule which may advantageously be keratinized can safely be given in 10-grain doses twice or even three times daily Thus given, it acts not only as a disinfectant of the intestinal canal but as a very powerful deodorant of the fæces. To do any real good it must be given over long periods of time say a month or six weeks.

The salicylates especially in the form of salol (salicylic ester of phenyl) quinine salicylate, and bismuth salicylate have a considerable reputation with some physicians as efficient intestinal antiseptics. I cannot, however share in the enthusiasm which is sometimes expressed for them In my hands their results have been disappointing The same may be said of beta naphthol of which many speak in high praise it has never succeeded in convincing me of its efficacy With its cousin germane benzo-naphthol, prepared by the action of benzoyl chloride on beta naphthol it is far otherwise I regard this drug as second to none in its power of disinfecting the intestinal tract and the blood stream. It may be given in doses of 10 to 15 grains three times daily as a tabloid (grs v) or in a cachet. Unlike thymol no special caution is necessary in prescribing it and unlike beta naphthol itself, it

does not seem to have any tendency when given over long periods to derange the kidneys.

One of the best of the intestinal disinfectants is mercury but as mercury in all its forms is something more than a disinfectant its use is necessarily limited by its chief physiological effects it is consequently outside the present category

In the objection which is sometimes urged against chemical intestinal disinfectants it must be admitted that there is much force The objection points out that an efficient bactericide will kill not only the enemy microbes but those friendly ones upon whose beneficent activities Metchnikoff insisted with such curious results. This is a very pertinent criticism which it would be more easy than it is to dismiss as mere theory if the results of our present antiseptic therapy were always clinically satisfactory In certain cases these chemical disinfectants succeed admirably but in others they fail and their failure reminds us that the real intestinal antiseptic is to be found in the intestine itself If we could but evoke an increased activity of the natural defences the necessity for such aids as thymol and benzo-naphthol would disappear Attempts are already being made in this direction by administering secretin and other hormones. It is still too early to write with confidence on the measure of success which is to be expected from such endeavours, but the principle is undoubtedly sound. I have had some experience with a preparation known as

Secretogen (G W Carnrick) and the results have so far seemed to justify the hopes which led to its introduction. It appears to stimulate the gastro intestinal tract to more vigorous function and thus to lessen the toxæmia It seems well worth a trial in cases where the poisoning has led to loss of appetite and digestive disturbance

We pass now to the consideration of the measures at our disposal for overcoming the stasis itself Amongst the most important of these is the ensuring of proper support for the abdominal viscera by toning and if necessary re-educating the muscles which form the anterior abdominal wall It is not necessary here to consider the matter further than by saying that massage and properly directed exercises are capable of doing a great deal of good in this direction Mechanical supports are very useful adjuncts even to well-developed abdominal muscles, especially after middle age but the supports should be conceived on sound anatomical principles and carefully executed so as really to fit the individual patient. A great many of the abdominal belts upon the market are worse than useless, inasmuch as by constricting the area above the umbilicus they encourage the viscera in that fatal descent into the pelvis which is so surely productive of kinks and bands. Many a good corsetière is capable of making a well fitting abdominal support, the so-called straight-fronted stays being very serviceable to this end. Messrs. Walton and Curtis, of 8 Old Caven

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dish Street, make an excellent contrivance for this purpose the original lines of which were I believe suggested by Sir Arbuthnot Lane himself.

In so far as our knowledge permits, we should base our application of purgatives upon ascertainable facts It is for example, desirable to find out which of Keith s intestinal motors is at fault, and if possible to stimulate that particular one without overstimu lating and thus fatiguing the others. In all probability it is this fatigue of overstimulated motors to which we refer when we speak of a purgative—*e.g* castor oil—which leaves after-constipation. It is too often assumed that the evil effects of stasis are due solely to absorption from the large intestine an erroneous assumption which dictated the heroic lavage of the colon which is known as the Plom bières treatment. I am very far from saying that such treatment is undesirable I believe on the contrary that in cases where the stasis is really in the colon it is capable of doing a great deal of good, especially as a measure preparatory to treatment at once more sustained and more gentle That the stasis is often, perhaps most often, in the small in testine is obvious both from a study of Lane s kinks and the consideration of Keith s motors. In the bismuth meal and the radiograph we are now fortunately possessed of a certain means of diag nosis on this very important point, and where such means are available they should always be appealed to. The two things which have most retarded the

scientific study of chronic constipation are the universality of the ailment and the superficial case with which it may temporarily be overcome.

We do not yet know enough about Keith s motors and the causes which disorder them to enable us to deal effectively with their derangement, but we do know that certain drugs affect certain areas by preference. Mercury podophyllin, and euonymin for example exercise their influence mainly in the duodenum the sulphates of sodium and magnesium are active primarily in the ileum colocynth chiefly in the large intestine and aloes almost exclusively in the rectum Most of the other purgatives which we employ—for example, cascara, rhubarb and jalap—affect more than one area, and a great many produce their results as stimulants of the whole gastro-intestinal tract, bringing all or most of the motors within their influence. It is a curious and senseless and wholly unscientific parrot-cry which invests nux vomica with any power as a purgative

The search for a drug which will at once relieve constipation and abolish a tendency thereto is like the search for the elixir of life or the philosopher s stone. A little consideration will show that such a drug does not and cannot exist. For under wl euphemism soever their real effect may whether they be called aperients laxatives h gogues purgatives, cathartics, cholagogues or not, every one of them is essentially an poison with a selective action on the

tract or some part thereof which when taken habitually provokes the production of antibodies which will ultimately more or less completely nullify its action. The discovery of cascara gave some encouragement to the futile search for an ideal drug but anyone with any real experience of its properties must realize that its merit resides solely in the fact that it produces antibodies more slowly and less vigorously than most others. In the long run the antibodies are duly evoked, and the dose of cascara must be increased. Until further investigation succeeds in throwing more light upon the whole question, we are thus reduced to handling such aperients as we possess so that no one of them is employed to the point of producing its antibodies. This means that in the treatment of chronic constipation in addition to paraffin oil and benzonaphthol, we must ring the changes on various laxative drugs It is my own practice to give a list of seven one for each day in the week with strict injunctions to the patient that, vary them as he will he is not to take any one for more than two days in succession. In otherwise healthy adults my list always includes cascara, one mercurial and one saline in children, aloin in old people belladonna. A very good pill which figures in most of my lists is one of whose composition I am ignorant—Pil Savonneuse (Boissy)

In the matter of salines, it is to be remembered that these are less irritant than most other laxatives.

and are much less likely to evoke the neutralizing anti bodies. They act by attracting fluid into the intestine and thus aid in flushing out the back waters. Salines have thus many advantages over *most other laxatives. The disappearance from the* market of the Austrian and German natural aperient waters at first caused some difficulty British firms have now however filled the gap by the introduction of suitable substitutes. I can speak well of Tonalka and of Apwa.

In combating the deeply rooted prejudice against the habitual taking of laxatives, begotten of the excesses of our forefathers, the profession of to-day has a long and stubborn furrow to plough. Nothing is more common than for patients to object to any treatment suggested for chronic constipation on the grounds that they do not want to get into the habit of taking drugs. That is academically a praiseworthy attitude the reply to which is that it is much better to take drugs than to be a walking cess pool. The most difficult people to persuade are those who are satisfied with a small but perfectly regular daily motion. They will not believe that there is a residue the absorption of whose toxins is the cause of the symptoms arising in diverse places most of them remote from the abdomen. Until the profession succeeds in overcoming these prejudices and obstinacies, the most potent cause of what may be called out patient maladies will continue to flourish with destructive security

mately falls to their share. When such a state of matters is to be suspected the right treatment consists in calling upon the other emunctories, especially the skin, to undertake their share of the burden, and by suitable diet to lessen as much as possible the manufacture of the offending material. A hot bath—hot enough that is to produce free diaphoresis—is an expedient which is too much neglected in the treatment of this condition. The warmth is very grateful to the patient, and the diaphoresis helps to relieve the work of the intestines. In this way the diarrhœa is checked, while the discharge of the offending material is not interfered with.

The commonest cause of diarrhœa, however is the presence of irritating matter in the intestinal canal itself. Here the condition is not salutary because it is as a rule futile. The irritant, whatever may be its nature produces increased peristalsis below the point at which it is situated, so that the resulting diarrhœa tends to exhaust the patient, without in any way contributing to the removal of the cause In such cases, which constitute the vast majority of those with which we have to deal, an efficient evacuant (say ½ ounce to 1 ounce of castor oil) which will act on the intestine from above the site of the irritant should be given at once. It seems needful to dwell upon the necessity for this, because I find that diarrhœa is so often treated by astringents without any preliminary evacuant—a procedure which is as unscientific as it is useless. Slight looseness of the

bowels may of course, occasionally be successfully so treated but we must remember that household remedies have invariably been tried before a case of diarrhœa reaches a doctor and that household remedies consist of astringents. To neglect the evacuant, therefore, is to do wrong both scientifically and tactically the only effects of so doing are to prolong the sufferings of the patient and to bring discredit upon the practitioner

When the bowels have been cleared of the offending matter astringents may be given with every confidence. In these it is generally wise to include opium, always supposing of course, that the kidneys are in a healthy condition. Opium not only assists the action of the astringents but it affords rest to the bowel and soothes the irritated nervous system. The combination which I have found most efficacious for this *purpose is as follows:*

℞.		
	Tr. opii	♏x.
	Sp. ammon. co.	♏xxx.
	Ess. menth. pip.	♏xx.
	Tr catechu	ʒi
	Aquam	ad ℥i.

M. Sig: Every four hours.

Preceded by a dose of castor oil and a hot bath, I have never known this mixture to fail in affording relief in diarrhœa when the condition was caused by a simple as opposed to a specific irritant. Diet is of course an important matter in guiding the malady to a satisfactory conclusion but the dietetic

management consists more in the application of rational general principles than in the prescription of any particular régime. It is advisable to remind the patient that food, when well masticated and insalivated, leaves very little for the irritated intestines to do, and that the more thorough these processes are the more quickly will the irritation subside. Milk is probably the best food for those with whom it agrees. When all is said, however, the fact remains that the most suitable régime in diarrhœa is fasting. Even the blandest food produces a certain measure of stimulation, and what the intestinal tract requires is not stimulation, but rest.

Diarrhœa is apt to appear as an early event in two complaints, of whose existence it is occasionally necessary to remind ourselves—namely, Graves' disease and Addison's disease. The latter is not very common, perhaps, but when it does occur it is well for all parties that it should be recognised early. To this end it should always present itself as a possible explanation of what may appear to be an ordinary attack of diarrhœa. The same is true of Graves' disease. This is far more common than Addison's disease, and as the only other symptom may be tachycardia, we should be on our guard against dismissing as a little 'nervous' irritation a case which may ultimately progress to thyroid enlargement and exophthalmos. Tannigen (di-acetyl-tannin) is a good symptomatic astringent. It should be given in a cachet (10 grains) three times a day

Fissure of the anus and stricture of the rectum often lead to diarrhœa by causing accumulation of fæces. Persistent diarrhœa in a person over forty should always lead to a careful examination of the rectum, as malignant disease is, under such circumstances, probably the commonest of all causes.

A group of symptoms variously designated but now usually recognised under the title of *mucous colitis* may be associated either with constipation or diarrhœa. As a rule the one alternates with the other but it is generally the diarrhœa which brings the patient under observation. There is always mucus in the stools sometimes in very large quantities, and it is occasionally sufficiently organized to resemble shreds of membrane (muco-membranous colitis) Not infrequently blood is also present. The diarrhœa, which is accompanied by a considerable degree of pain, is unaffected by the ordinary remedies, and leads rapidly to emaciation and the development of symptoms of nervousness. So much is this the case that mucous colitis has been considered a morbid entity and has been described as a neurosis. Against this facile view of the matter and the mistaken therapy which is its logical outcome, it seems necessary to enter a warning Lockhart Mummery has shown[1] that mucous colitis is merely a symptom that it may be due to a great variety of causes amongst which may be mentioned malignant disease ulcers adhesions retroflexed uterus, and the apparently

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conditions the sickness may easily be the only obvious symptom and unless we make it a rule always to examine the urine and the fundus oculi in every case of vomiting *for which no obvious explanation is forth coming* we lay ourselves open to the risk of very grave errors of diagnosis.

Cerebral vomiting is generally accompanied by headache and optic neuritis and careful search for physical signs in the nervous system will nearly always bring to light some other facts which point to its true origin. It is a common and very disastrous mistake to label as hysterical, sickness which is due to some serious intracranial lesion. Vomiting does of course, occur in hysteria, but, then, hysterical or functional manifestations are of very frequent occurrence in almost all intracranial conditions, so that it is never safe to make a diagnosis of hysteria until structural disease can be positively excluded. In children vomiting is commonly an early event in meningitis.

Vomiting may be the first event to call attention to the existence of *kidney disease* and negligence to examine the urine may thus be fraught with very serious consequences for if we do not realize that the sickness is of renal origin not only shall we fail to treat the disease by appropriate means, but in our endeavours to stop the vomiting we may have recourse to measures, such as the giving of morphia which may actually militate against recovery Moreover it is well to remember that absence of albumin

does not necessarily exclude the possibility of disease of the kidneys. In nephritis, of the chronic interstitial type especially albumin may be absent, so that evidences of renal trouble must be sought for by examination of the heart and arterial system—the former for hypertrophy of the left ventricle, the latter for arterio-sclerosis.

Other common causes of vomiting are *hernia pregnancy whooping-cough*, and *phthisis*. It is, of course of the utmost importance to bear the existence of these factors in mind, so that they may be examined for Our mistakes are less often due to ignorance than to the forgetfulness or negligence begotten of hurry A form of vomiting which is characteristic enough to lead one immediately to suspect its true cause is that which heralds the invasion of an *acute specific disease* Here the sickness is not accompanied either by nausea or retching but the contents of the stomach are suddenly completely and unexpectedly expelled without pain or discomfort. Except where an emetic has been given, this kind of sickness is very suggestive of the onset of an acute fever of some sort.

The vomiting which occurs in association with the condition variously called *sick headache* and bilious headache is liable to be very troublesome more especially if the true nature of the underlying condition is not recognised and treated. This matter is fully discussed in the next chapter but I may say here that the name bilious, as applied to these

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attacks is particularly unfortunate, for the reason that it suggests treatment by mercurial and other cholagogue cathartics, than which, as a rule, nothing can be more harmful. These attacks are in a very large number of cases due to ocular refractive errors and other peripheral irritants and unless the patient is properly fitted with correcting glasses, or the irritation otherwise subdued, drugs such as phenacetin, though they may give relief at the time, contribute nothing whatever to the prevention and ultimate cessation of the attacks.

The influence of refractive errors in the causation of vomiting, apart altogether from headache does not seem to be sufficiently appreciated. It is by no means uncommon for a person whose error—say a low degree of astigmatism—has been corrected, and, before he has accustomed himself to the use of the glasses, to complain that the glasses cause nausea, and even attacks of vomiting These attacks will often lead to the discontinuance of the glasses. This is a very foolish procedure, into the result of which it is impossible here to enter. What it seems necessary to insist upon is that nausea, vomiting and a host of other symptoms, often rightly attributed to neurasthenia, but more often wrongly relegated to hysteria, are very frequently due to uncorrected errors of refraction, and that, unless these errors are corrected the symptoms will persist. Eyestrain[1] is responsible for an enormous amount of ill-defined nervous troubles of modern life,

[1] See next chapter

and the practice of some ophthalmologists of dismissing low degrees of error as unimportant is responsible for much of the futility in the treatment of these troubles

Sea-sickness is in many cases, at any rate, traceable to the ocular apparatus. The landsman is unable, because he is unaccustomed, to accommodate his visual machinery to the rapid and sudden changes of movement caused by a rough or choppy sea, and his efforts to bring about this accommodation give rise to nausea and vomiting That, in many cases, this is the sole factor at work is evident from the fact that the simple expedient of wearing a patch over one eye when on board has been sufficient in so many cases to prevent sea-sickness. No efforts are made to reconcile the workings of the two eyes strain is prevented, and sickness remains absent. It is not, of course suggested that sea-sickness is always due to this cause, but it very often is, and the above-mentioned expedient is consequently always worth a trial. In the majority of cases, no doubt, other factors are also at work, and in most of them we must suppose that there is an undue irritability of the nervous system, which causes a too ready response to slight stimuli.

In patients of this type it is generally quite easy to prevent sea-sickness if we can commence treatment a week or so before the voyage begins. The excitability of the general nervous system is reduced to normal by giving bromide of ammonium in 10-grain doses three times a day for at least three days. The primæ viæ are

attacks is particularly unfortunate, for the reason that it suggests treatment by mercurial and other *cholagogue* cathartics than which, as a rule, nothing can be more harmful. These attacks are in a very large number of cases due to ocular refractive errors and other peripheral irritants and unless the patient is properly fitted with correcting glasses, or the irritation otherwise subdued, drugs such as phenacetin, though they may give relief at the time, contribute nothing whatever to the prevention and ultimate cessation of the attacks.

The influence of refractive errors in the causation of vomiting apart altogether from headache does not seem to be sufficiently appreciated. It is by no means uncommon for a person whose error—say a low degree of astigmatism—has been corrected, and, before he has accustomed himself to the use of the glasses, to complain that the glasses cause nausea, and even attacks of vomiting These attacks will often lead to the discontinuance of the glasses. This is a very foolish procedure into the result of which it is impossible here to enter. What it seems necessary to insist upon is that nausea, vomiting, and a host of other symptoms, often rightly attributed to neurasthenia, but more often wrongly relegated to hysteria, are very frequently due to uncorrected errors of refraction, and that, unless these errors are corrected the symptoms will persist. Eyestrain[1] is responsible for an enormous amount of ill-defined nervous troubles of modern life,

[1] See next chapter

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suitably cleared, and, with a view of exercising a special effect upon the stomach some liq bismuth ammon. cit. (2 drachms) with tr nucis vom. (8 minims) is added to each dose of the bromide mixture.

The medicine should not be taken on board—not only because it is then too late, but also because there is another drug which has proved in my experience *unfailing even when given without any preliminary* preparation by bromides—namely chloretone. A good way of giving chloretone is to prescribe it in 5 to 10 grain cachets—one cachet to be taken during the train journey down to the boat, another as soon as the patient is settled on board, and a third, if necessary at any time during the voyage. If the patient is directed to preserve the dorsal posture when on board, the third cachet is very seldom necessary I have now prescribed chloretone in a great number of cases, and where the way has been prepared for it by the bromide mixture, I have not known it fail, and even in the absence of any such preparation, *I have learned* to have the utmost confidence in it. It may be given in 10-grain doses if sickness threatens. It will often stop an attack which is actually in progress.

It is not infrequently necessary to treat symptomatic vomiting either pending the removal of the cause or when the cause is *unfortunately not removable*. A great many expedients have been suggested for this purpose, some of which are often useful, but which seem as often to be without effect.

The application of a blister or a mustard plaster to the epigastrium is often very successful but no less often useless. Occasionally successful, also is the application of an ice-bag to the same region or a poultice, or gentle massage. These are all well worth trying, for they are simple enough and if they do not succeed they cannot do any harm. And here, as in the case of diarrhœa one of the best of therapeutic measures is complete abstention from food Such abstention would often be willingly practised by the patient but misplaced solicitude prevents him from following his wholesome instincts.

Of drugs the simplest is undoubtedly lime-water and Burney Yeo urges strongly that it should be given a trial more frequently than is now the case. A tablespoonful, he says should be administered hourly for several hours before recourse is had to other means. He recommends, further the addition of one drop of creosote well shaken up with each dose in case the lime-water alone is unsuccessful. Champagne is perhaps one of the most popular of all remedies for this condition, and it has the merit of being one of the most efficacious. It should be given, preferably iced, in quite small doses, say 1 to 2 drachms repeated at intervals of ten minutes or a quarter of an hour until vomiting ceases. I have known many cases in which this succeeded when all other measures had failed.

Vin. ipecac., liq arsenicalis and hydrocyanic acid have all enjoyed some reputation in the treatment of vomiting and for this purpose they are all employed

in minute doses—i e., not more than 2 minims. Ringer speaks highly of vin ipecac. but not everyone is able to share his enthusiasm. Fowler's solution is admittedly useful in the morning vomiting of drunkards, but I have found it beneficial in symptomatic vomiting arising from other causes. Hydrocyanic acid is usually very reliable, but it is not wise to restrict its use to the small doses above suggested. It may be necessary to prescribe it in 3 or even 5 minim doses to produce the required effect, but these must obviously not be frequently repeated. A combination of all three drugs in 1 drop doses, *repeated at intervals of ten minutes or a quarter of an hour* is an expedient to which I have occasionally resorted with success.

Bismuth is a useful drug in vomiting and, in combination with oxalate of cerium it is, when the stomach will retain anything, probably the most reliable of all. It is best given in cachets

℞ Bismuth subnit. ... ... gr xx.
Cerii oxalat. ... ... gr v
M. Ft. pulv in cachet i.

But the cachet must be well moistened before any attempt is made to swallow it. Finally *morphia* by hypodermic injection, though it often causes vomiting, will not infrequently stop it. When given for this purpose the dose should be relatively large—that is, about ¼ grain. Small single doses are much more liable to cause gastric disturbance than large ones.

In association with vomiting it seems appropriate to consider briefly the allied condition of GIDDINESS[1] Although this condition is common in cerebellar disease especially cerebellar tumours, in disseminate sclerosis, and is not altogether uncommon in tabes, it should not be regarded as necessarily indicating the presence of some grave cerebro-spinal mischief. It is frequently due to ocular troubles paralysis of an ocular muscle will give rise to it, and errors of refraction are among the commonest causes. Abnormalities in or about the ears very readily occasion the symptom hardened cerumen being among the most frequent.

Ménière's disease, or aural vertigo which is due to an affection of the semicircular canals may cause paroxysmal attacks of giddiness, accompanied by vomiting, and is thus liable to be mistaken for migraine (*q v.*, p. 172) Ménière's disease is, however almost always associated with some degree of deafness, which is seldom the case in migraine moreover in aural vertigo the giddiness is very pronounced so much so that the patient not infrequently falls. For the treatment of aural vertigo bromide of potassium and belladonna, persevered with over long periods, often do a great deal of good. During the attacks both quinine and the salicylates are highly spoken of. The former should be given in large doses (10 *to* 15 grains or more) the latter in the form of aspirin

[1] See The Border Land of Epilepsy by Sir William Gowers (J and A. Churchill, 1907)

(10 to 15 grains) is probably equally efficacious less liable to produce unpleasant by effects. S times hydrobromic acid acts better than any o bromide salts. This drug is much the most rel remedy we have in those persistent noises in head which *occasion annoyance* and alarm to t who suffer from them.

Giddiness is said to be sometimes due to ca arising in the digestive apparatus. There is very siderable doubt as to the stomach ever being dir responsible for the symptom. The real caus giddiness in most cases, apart from those which h just been noticed, is some disturbance in the v motor mechanism. We know that toxins origina in the digestive tract are very powerful disturber this mechanism and it is exceedingly likely t digestive disturbances may cause giddiness in way The disturbance as a rule takes the form vaso-constriction, but there seems no reason why opposite condition of vaso-dilatation should not a bring about the same result. The circulat apparatus in the brain is of so delicate a nature t any alteration of the calibre of the conducting ves is liable to cause symptoms. The giddiness of elde people usually means atheroma that of the gou either high arterial tension or its next stage, arte sclerosis even the giddiness of epileptics is proba circulatory in origin, and that which is so commo the climacteric is *certainly so*

Attacks of giddiness therefore, should never be lightly regarded. They may be due to transitory causes, but they may on the other hand indicate some very serious condition They should always lead to a careful examination of the nervous system, including the special senses and failing the discovery of a cause therein, the question of the state of the heart and bloodvessels should engage the most anxious attention. It is not too much to say that the vast majority of cases of simple giddiness are due to vascular changes, and that among these high blood pressure occupies the first place For a consideration of this question and its treatment, the reader is referred to the chapter on Goutiness.

ADDITIONAL FORMULÆ.

For Colic (Ludlow).

R.	Chlorof.	ʒij.
	Morph. acetat.	gr iij.
	Olei anisi	♏xvi.
	Ol. menth. pip.	♏xvi.
	Syr. acacia	℥ss.
	Aq. camph.	ad ℥iv

M. ʒii. ʒss. for a dose.

For Colic with Constipation (Paris).

R.	Ol. cajuputi	♏iv
	Sacch. alb.	gr x.
	Rub together and add:	
	Tr jalap.	ʒi.
	Decoc. aloes co.	ad ℥iss.

M. Ft. haust.

CHAPTER IV

RHEUMATISM, NEURALGIA, HEADACHE

RHEUMATISM is a term which, if it ever had a precise meaning has now unfortunately, lost it. As applied to *acute rheumatism* or rheumatic fever it bears no doubt, a definite significance but it is now generally admitted that the disease which is so described has no real relationship with the numerous other morbid conditions to which the terms rheumatism or rheumatic are commonly applied. These terms are made to comprise most of the arthropathies both acute and chronic. The arthropathies have been very conveniently divided into the essential and the accidental the former being those in which the joint affection is the predominant feature in the disease, such as gout, acute and subacute, rheumatic fever morbus coxæ senilis and rheumatoid arthritis *the latter being those* in which the joints are involved secondarily to some other affection, such as pulmonary osteo-arthritis, and the arthritis of gonorrhœal, *scarlatinal*, *septic*, syphilitic or neuropathic origin. These conditions are of course, quite distinct from each other and as they all belong to the sphere which *is properly*

covered by the text-books they need not concern us here. There remain for our consideration, then, chronic gout and chronic rheumatism. The former is dealt with in the next chapter into the problems presented by the latter I now propose to enter

In the existence of chronic rheumatism, properly so called I may say at once that I do not believe. I do not believe, that is that there is any chronic form of the condition which we call acute rheumatism, or rheumatic fever Fagge says Chronic rheumatism ought to mean a chronic arthritis of the same pathology as the acute outbreaks of rheumatic fever. Such a disease, we may affirm, does not exist. With this opinion though it is not shared by all, even by so great an authority as Osler I am in entire accord. Certain chronic joint troubles it is true are liable to appear as sequelæ of rheumatic fever; but those same joint troubles appear equally often after true influenza, after sore-throats, and, in the predisposed, after local injury to joints, such as sprains. Moreover these joint troubles, inasmuch as they affect, not the cartilage, synovia or bone but merely the fibrous tissues surrounding the joint, have no real relationship to those which occur in acute rheumatism. The conditions which are admittedly closely related to true rheumatism, such as chorea tonsillitis and subcutaneous nodules, have of course no arthritic element, and are not in any sense of the term chronic so that although their power of causing rheumatic endocarditis should never be lost

sight of it is impossible to include them in such a term as chronic rheumatism.

The fact is chronic rheumatism has nothing whatever to do with true rheumatism, and it would be well if some authoritative name could be applied to the condition which is variously described as rheumatics, chronic rheumatism, muscular rheumatism, tendinous rheumatism, rheumatic myositis, myalgia, and neuralgic rheumatism for the morbid state which is thus buried beneath misleading and confusing names has a very distinct and very definite existence, with its own pathology symptomology and therapeutics so that the retention of the term rheumatism in connection with it is not to be defended even on the ground of convenience In the meantime, being to some extent bound by custom, I propose to use the expressive, illiterate but highly convenient term rheumatics invented by and beloved of the laity to designate the condition.

Rheumatics, then, may be described in the terms of Stockman,[1] who has done so much to introduce order into the chaos which previously existed on this subject, as a condition in which the essential pathological changes are confined to white fibrous tissue in which therefore the manifestations appear chiefly in aponeuroses, fibrous septa, the sheaths of muscles and nerves, periosteum, and the fibrous structures surrounding the joints. The lesion, he

[1] *British Medical Journal*, February 27 1904.

says, consists in inflammation and hyperplasia of the connective tissue in patches and the condition may be widely spread over the body or be confined to a certain area of it.

When once the conception presented by this description is realized, the isolated and disconnected facts which have hitherto been associated with the condition at once fall as it were, into their appropriate places. White fibrous tissue is found practically in all parts of the body so that the rheumatics may appear anywhere but inasmuch as there is a special distribution of this tissue in connection with joints, voluntary muscles, and nerves, it is not surprising to find that it is in those structures that the disease most often shows itself. It is thus evident that so-called chronic articular rheumatism, muscular rheumatism, or myalgia, especially in the form of lumbago neuralgia, especially in the form of sciatica and brachialgia, are all one and the same disease the only real difference between them being the anatomical situation of the fibrous tissue which is attacked by the inflammation and hyperplasia described by Stockman.

Where the fibrous tissues all over the body are more or less impartially attacked the result is what is known as febricula, or feverish cold—a condition to which reference has already been made (Chapter I.) as a fruitful source of error in diagnosis those who do not remember its existence almost invariably labelling it influenza.

Rheumatics, then, includes arthritis, lumbago torticollis and other aponeurotic and muscular inflammations, wherever situated sciatica, intercostal and other neuralgias and, inasmuch as the pericardium, pleura, and dura mater are all richly supplied with white fibrous tissue, it will be proper to comprise in this category certain forms, at any rate, of cardialgia, pleurodynia, and rheumatic headache.

This inflammation of white fibrous tissue or 'fibrositis as Sir William Gowers has named it,[1] is said to be due to a variety of causes. It certainly seems to be determined by many conditions and influenced by many others, but the cause is probably always the same. This cause is connected with the gastro-intestinal tract, and is almost certainly produced by the absorption of toxins therefrom. The toxins are the result of defective metabolism, from the too free ingestion of meat foods and alcoholic drinks, or their inadequate elimination.

Such a state of matters does not constitute gout, but it constitutes a condition very nearly allied thereto and we are generally quite safe in treating a person who is subject to fibrositis as if he were goutily inclined. And this we may do in spite of the fact that the manifestations are by no means confined to the old or middle-aged. The old are, perhaps, more prone to be attacked by chronic arthritic fibrositis, but myalgia is more common in

[1] Lumbago, by Sir William Gowers (*British Medical Journal*, January 16, 1904).

young adults, and even children are occasionally affected.

Of determining causes, damp cold, and atmospheric changes appear to be the most potent. It is difficult to trace the connection between the states of the weather and the incidence of fibrositis, but that there is a very intimate connection everyone who has ever suffered from the disorder will readily agree. Many a patient complains that he is a regular barometer that he can be sure that a change is imminent, but none can foretell with any approach to accuracy what the nature of the change will be. Some will have an attack when the wind is going to the east, others when it is going to the west, and most will predict an increase in atmospheric humidity

The question is an interesting one about which, however very little is at present known. These atmospheric influences, whatever they may be are particularly liable to affect joints or muscles which have been the seat of injury or overwork Thus, the rheumatics will always select by preference the fibrous tissue surrounding a joint which has been sprained, and the golf shoulder or tennis elbow will be found afflicting the particular joint which has borne the brunt of the season s work. The prevalence of lumbago is almost certainly susceptible of a similar explanation, in that the muscles and aponeuroses therein concerned are those which maintain the erect posture.

The application of sudden cold is a very powerful

determining cause. Sitting in a draught will unquestionably bring on an attack in a predisposed person. A common history is that of a sudden onset during the cold morning tub and some bathing fatalities are probably due to this cause. But whatever may be the exciting or determining cause of a particular attack, the point to remember is that the essential condition precedent is the existence of a toxin in the blood, and that that toxin in the large majority of cases, if not in all, is of gastro-intestinal origin. This fact at once points to the two most important indications in the treatment of a fibrositis wherever it may appear and these are the cleansing of the gastro-intestinal tract by a mercurial purge, and the careful regulation of the diet by the diminution of meat foods and alcoholic drinks. An additional measure of the *utmost utility at the outset is an ordinary hot bath of* 100 F or over or better still, the hot wet pack. A radiant heat bath is *probably* better than either where this can be procured without exposing the patient to the risk of subsequent cold. Warmth and equability of temperature are very important during the first forty-eight hours of an attack.

So much then, for the etiology pathology, and general indications for treatment of fibrositis. Let us now proceed to consider the condition as it appears in the various parts of the body and first, as to its manifestations in the neighbourhood of the joints. One of the characteristics of the condition is that one

joint only is usually affected. This is the rule to which there are, of course, exceptions but it is seldom indeed that more than three are affected In recurring attacks it is nearly always the same joint which is involved, and, if any joint in the body has ever been the seat of injury it is tolerably certain that the fibrositis will select that one. When once the process has established itself in a joint there is not, as in true rheumatism, any tendency to leave that joint and go to another The complaint in connection with the affected joint is one of pain and impaired mobility the latter usually depending very much upon the former The pain is not often to be described as merely chronic it is much more often subacute and occasionally it is even acute. It is aggravated by sudden and violent movement, and varies greatly with changes of temperature and atmospheric humidity The arthritis is never accompanied by fever and it has no tendency to produce endocarditis or other complications.

The medicinal treatment of this manifestation of rheumatics is not very successful. The salicylates, especially in the form of aspirin (10 to 15 grains three times daily) are occasionally beneficial, though I have had better and more uniform results from iodide of potassium and guaiacum (10 grains of each three times daily) Antipyrin, together with salicylate of sodium, is a useful combination, especially where pain is a prominent symptom but this combination is less useful here than in the neuralgic type of the

affection. Locally the application of warmth is invaluable. A hot douche, which, in the case of such joints as the wrist, knee or ankle, can be improvised at home by holding the part under a hot tap is an excellent expedient, to which recourse may be had two or three times a day with great advantage. Hot fomentations, especially when frequently repeated, are also very useful, and compresses of potassium iodide and citrate of lithia often seem to hasten resolution. Local exposure to radiant heat is in my experience one of the very best means of *bringing about resorption and disappearance of the* fibrous thickening which is the essence of this condition.

Although it is, on account of the pain, necessary to keep the joint for the most part at rest, this must not *lead to forgetfulness of the fact that movement is* absolutely essential to anything approaching a satisfactory issue. This movement must at first be slight and passive but as the pain subsides it should become free and active. An enormous amount of avoidable crippling is brought about by allowing patients to coddle joints thus affected. Movement is the essence of the cure and if it is neglected the joint very readily becomes stiff and disabled. Of course, the movement must be applied with sympathy and discrimination. It is better that the doctor himself should do it during the acutely painful period, if there be one, and as soon as circumstances permit he may delegate the duty to a competent masseur or,

where such is not available, it is usually not difficult to instruct a member of the household in this means of restoring function.

These and similar measures are in very chronic or recurrent cases much better carried out at a spa than in the patient's own home. It is, indeed, in the treatment of such cases that the baths, douches, and massage for which such places are famous, justify most completely the confidence which is now so generally accorded them. Of Continental summer resorts Aix-les-Bains justly enjoys the highest reputation, but Vichy Luchon Baden Baden, and many others, are fully equipped for the treatment. In winter Salsomaggiore, in Italy is a place to which such patients may very suitably be recommended. In this country at Buxton, Woodhall Spa, Llandrindod and Harrogate in summer time, and at Bath and Sidmouth in winter the necessary treatment is admirably carried out and by no means the least advantage of the home stations is that the practising physicians have, owing to the English climate, opportunities for gaining an amount of experience in the various phases of the condition which is denied to their continental brethren.

MYALGIA.—If, of the pains of arthritic fibrositis, it may be said that they are subacute more often than chronic, of those of myalgia, or muscular fibrositis, it may be affirmed that they are acute more frequently than subacute. They vary of course, as do the others. They are generally confined to one set of muscles, as

those of one shoulder joint or one side of the neck (torticollis) they are usually relieved by firm pressure, and are invariably worse at night. This aggravation at night, or rather in the early morning is very characteristic. The patient wakes in great pain, so great that he doubts the possibility of being able to dress himself nevertheless, when he begins to move even in his bed, he finds that matters are not so bad as they at first seemed, and by the time he gets downstairs his troubles may have resolved themselves into stiffness and fear of sudden movement. *The onset of myalgia is generally sudden, occasionally so sudden as to give the impression of a blow* and when it starts in this way it is apt to be very acute.

Lumbago is often quoted as the typical form of myalgia. This in my opinion it certainly is not, for the reason *that in most cases, if not in all, the fibrous* tissue in connection with structures other than muscle are always involved. Luff[1] is certainly right when he says In the majority of cases of lumbago the affection is not in the quadratus lumborum, nor even in the deeper *muscles of the back, but is in the fibrous* tissues directly over the sacro-iliac joint and in the joint itself. It is from the spreading of the inflammation along the sheath of the sciatic nerve that we find lumbago and sciatica so frequently associated.

A much better *instance of myalgia, though* even here tissues other than the muscular are often included, is supplied by deltoid and brachial myalgia.

[1] *Clinical Journal*, October 11, 1905.

This is liable to be very acute and is generally of long duration, it is of all others perhaps that which is most conspicuously influenced by meteorological variations, and subject to nocturnal exacerbations. Stiff neck or torticollis, is another good instance. This is especially common among young adults, and is fortunately very amenable to treatment.

Myalgia will often pass off in a few days without anything more heroic in the way of treatment than a hot application and some rubbing More often, how ever it becomes obstinate to household remedies and demands careful management. Internally nothing can compare with iodide of potassium and externally nothing is so efficacious as massage. The latter to be effectual, should be applied twice a day by some-one who is conscious of the needs of the situation. Mere superficial effleurage is useless. The muscles must be handled gently but firmly so as to promote the lymph flow within their substance. This will cause a certain amount of pain at first, especially if the operator be unskilful but in spite of this fact, the treatment must not only be continued, but it must be reinforced by the application of warmth in the form of poultices and fomentations and by the addition of stimulating liniments. A good plan is to rub the part with liniment of iodine and then apply a poultice Camphor liniment and chloroform liniment are also useful for this purpose. Luff[1] prefers anodyne appli cations and recommends a mixture of equal parts of

[1] *Loc. cit.*

panies lumbago may occur independently thereof, and, when so occurring it may be regarded as the type of an affection which is liable to attack almost any nerve in the body, some common examples of which are supplied by cervico-brachial neuralgia (often called neuritis) intercostal neuralgia, coccydynia, and plantar neuralgia. In sciatica, as in lumbago we should be especially cautious in accepting a ready made diagnosis for pain along the sciatic nerve may be due to causes other than fibrositis and if the pain is markedly worse at night, or, if both sciatic nerves are involved, it is tolerably certain that some much more serious factor is in operation.[1] A 'sciatica may be caused by a loaded rectum, by uterine and ovarian displacements, by tumours and disease of the spinal cord itself and such possible factors should always be carefully and exhaustively investigated before the pain is pronounced to be due to a neuralgia, and treated as such.

For this purpose it is important to determine whether the pain is due to pressure or to some factor in the nerve itself or in its sheath. In the former case the pain will not be sensibly aggravated when the nerve is put on the stretch, it may indeed, be to some extent relieved by the process, whereas, when the mischief is in the nerve or its sheath, the stretching will obviously increase the pain. In order to set this point at rest,

[1] F J Smith, Mistakes (*Clinical Journal*, December 27 1905).

the patient is placed upon his back and the pelvis firmly fixed against the bed by an attendant. The limb on the affected side, which must be kept fully extended at the knee is then gently and gradually raised by the examiner until it is at right angles to the couch. This will put the nerve on the stretch, and if no aggravation of pain results, then the cause is to be sought outside the sheath of the nerve it is not due to a fibrositis, and the condition is not, properly speaking a sciatica.

So far as the treatment of sciatica is concerned, there is not much to add to what has already been said in connection with other forms of fibrositis. Massage which is of the utmost importance in all these forms is in sciatica the one local remedy upon which any great reliance can be placed. Dr Lee[1] says It is in sciatica, of all the neuralgias, that massage has won its greatest reputation. Truly astonishing results have been obtained, even when the affection has been of many years' standing, and after every other conceivable means of relief has proved un successful.

This coincides completely with my own experience and since I have used massage perseveringly assisted in suitable cases by douching and the application of stimulating liniments, I have had no occasion to resort to acupuncture surgical stretching of the nerve and other heroic remedies which are often recom mended and which the tedious nature of these cases

[1] Hare s Practical Therapeutics.

so often suggests to the despairing physician. If massage were employed early in all cases, few would become chronic and if it is persevered with in cases which have become chronic, even to the causing of marked wasting of the muscles it will in time always bring about a cure. Some of the antineuralgic drugs, which will be noticed presently may also be used concurrently Some of them, especially phenazone and butyl-chloral have often seemed to me to do good in the way of rendering the massage more tolerable. Without massage these drugs may be palliative but they are never curative, as they are in neuralgia due to causes other than fibrositis.

It would be easy to multiply instances of the manifestations of the rheumatics as they occur in various parts and structures, but no good purpose would be served by so doing The essential points to remember are that these manifestations are due to inflammation of white fibrous tissue; that they may be acute, subacute or chronic that they are seldom or never accompanied by constitutional disturbance and that they are very amenable to treatment, more especially by iodide of potassium internally and externally by massage, passive movements and stimulating applications.

NEURALGIA.—Pain which follows the distribution of certain nerves is a very common disorder It may as we have just seen, be due to fibrositis but, so far at any rate as the smaller nerves are concerned, it is much more often due to other causes. Chief among

these are unsatisfactory blood states. That neuralgia is the cry of a nerve for healthy blood is an oft-quoted saying and certain it is that undue toxicity of the blood from whatever cause arising, is an important as it is certainly the most common, agent in the causation of pain. For toxins in the blood act not only by direct irritation of a nerve but they also act, as in gout, by causing vaso-constriction thus depriving the nerve of its due quantity of nutritive material Burney Yeo suggests that a factor of an opposite kind is not infrequently in operation—namely that the blood state may give rise to vaso-dilatation, and that it is a kind of blushing in the neighbourhood of the nerve which determines the pain.[1] However that may be all that it is necessary to realize is that impure blood is the most important cause of neuralgia, and that it may produce this effect not only directly but also by interference with the normal vasomotor mechanism Another cause scarcely less in importance, is the existence of an irritant causing fatigue of the involved nerve.

The presence of a neuralgia, then, should suggest—(1) a fibrositis (2) an unsatisfactory blood state, and (3) the existence of an irritant. With the first I have already dealt there remain therefore the other two to consider Of unsatisfactory blood states the commonest is surely anemia. Whether this be due to convalescence from acute disease to mere chlo-

[1] See also The Vasomotor Factor in the Pain of Migraine by Dr Francis Hare *Clinical Journal*, January 24 1906.

rosis to deficient coagulability of the blood[1] or other cause it is very frequently attended by neuralgia, more especially about the head and lower part of the trunk on one side.

The treatment of such cases resolves itself into the treatment of the anæmia by suitable hygienic, dietetic, and medicinal means. So far as hygiene is concerned an out-of-door life in a bracing climate is strongly to be advised. The diet should be regulated on the general principles elsewhere laid down—namely an abundance of vitamine-containing foods in which *butter and cream should receive a prominent place.* Fats seem to be concerned in some very special manner with the nourishment of the nervous system, and in the form of butter and cream they may be *freely given to such patients as we are now considering* There is no objection to allowing wine or beer in moderation to these cases. The best medicine is undoubtedly iron but the stronger salts, the sulphate and perchloride are much less efficacious than the citrates and tartrates. The two latter are readily assimilated, whereas the former are very apt to upset the stomach A useful formula is as follows

℞	Ferri ammon. citrat.	..	gr x.
	Liq arsenicalis	...	♏ii.
	Inf. quassiæ ..	...	ad ℥ss.

M. Sig. Ter die post cib.

As the patient s strength improves it may be desirable to substitute the following:

[1] Ross, *Lancet* January 20, 1906.

R.	Ferri quin. citrat.	... ...	gr xx.
	Liq arsenicalis ..	.. ..	℥v
	Tr. nucis vom. ..	... ..	℥iv
	Aquam aurant. flor	... ..	ad ℥ss

M. Sig Ter die post cib.

The presence of quinine even in such doses may help to subdue the neuralgia. When giving iron in any form and for any purpose it is of the utmost importance to keep the bowels open. This is best done by means of aloes at first, because this drug enhances the effect of the iron and later by cascara. A daily morning dose of a natural mineral water is also very useful

But where the neuralgia is an obtrusive feature of the condition it is generally necessary to prescribe something which has a direct influence upon the pain when this occurs. In anæmic cases and in all those in which defective nutrition is pronounced I have had better results from quinine and gelsemium than from any other combination.

R	Quin. mur	... .	gr v
	Acid. hydrobrom. dil. ...	.. ...	℥xx
	Tr gelsemini ..	.. ..	℥x.
	Aquam chloroformi	.. ..	ad

M. Sig : Every twenty minutes till pain ceases. Not more than four doses to be taken

This mixture, like most others where the relief of pain is concerned acts better in small doses repeated at short intervals than in single large doses.

The state of the blood in goutiness is such as to

be highly provocative of neuralgic pains. Inasmuch as this condition and its treatment are fully considered in another chapter it is here only necessary to emphasize the advisability of *examining for high arterial* tension in all cases of neuralgia, and where this is present, to point out the value of iodide of potassium in the treatment of the accompanying neuralgia. As this is the most potent of all drugs in counteracting the gouty state generally a gouty neuralgia ought very readily to yield to the measures proper to the treatment of the blood state itself. Occasionally however, it does not, and then it is well to have recourse to the following combination

℞.	Sodii salicylat. } Phenazon }	...	...	āā gr. v
	Syr. zingiber	...	...	ʒi.
	Aq. chloroformi ...			ad ℥i.

M. *Sig.: Every quarter of an hour until pain ceases. Not more than four doses to be taken.*

This is a most admirable combination in the migrainoid neuralgic attacks to which the gouty are peculiarly prone. I have appealed to it in a very large number of cases and so far never in vain. For a reason which it does not seem possible to explain, the combination of these two drugs is infinitely more effectual than either given alone. When directed to be taken as above, the mixture acts better than in single large doses.

A fruitful and easily overlooked cause of neuralgia, especially in women, is the toxic blood state induced

by chronic constipation. This must be treated by the curing of the vicious habit on the lines laid down in Chapter III. but here again we may have to treat the neuralgia concurrently with the treatment of the constipation, in which case the phenozone and salicylate mixture just described will usually be found the most useful, though quinine and gelsemium are to be preferred where in consequence of the long duration of the constipation, the patient is anæmic and emaciated.

Neuralgia is considered by some as a hysterical manifestation. This, of course it may be though hyperæsthesia is less characteristic of hysteria than anæsthesia. Neuralgia certainly occurs frequently in neurotic women, but I have generally found that there is some discoverable and removable cause for the neurosis of which the neuralgia is an occasional manifestation and this cause is more often than not a peripheral irritation, of which the origin is to be found in the teeth the ears or the eyes. Such irritation, when acute is a recognised cause of neuralgia in those who are not neurotic, and there is no difficulty in supposing that, when chronic, it may give rise to that nervous instability to which the term neurotic is applied. A common site for such irritation is the ovarian region. Examination of this region in neurotic women will often reveal pain on pressure over one or both ovaries in which case infinitely the best drug to use is belladonna. It is usefully combined with phenozone and is admin-

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tration should always be accompanied by the application of blisters small in size, but frequently repeated, in the region where the pain has been elicited

A practical point of considerable importance in connection with the management of these cases is characteristically expressed by Goodhart, in that altogether admirable little work Common Neuroses (which should be carefully read by every young practitioner) in the following passage

I have said it is a bad day for a man when he first knows he has a heart it is a ten times worse day for a woman when the pelvic pains to which so many are subject are focussed for her by medical opinion upon uterus or ovary If there is anything which curdles my blood, it is to hear a woman talk of her ovaries as she might of some intimate acquaintance.

In the manufacture of incorrigible neurotics the word ovarian, blurted inadvertently from incautious lips, is a common and potent ingredient.

Irritation within the buccal cavity is a frequent cause of *facial neuralgia* and it should be remembered that it is not only teeth which are obviously carious which may produce this result The radiography of the teeth has now been brought to such perfection that every suspected mouth should be X rayed. Unerupted teeth are far more frequent than used formerly to be supposed. For the relief of neuralgia of facial or cranial distribution arising from such a cause *butyl-chloral* is

probably the best of all internal remedies. It should be given in pill form, 5 grains every half hour until pain ceases not more than six pills to be thus taken. It is usefully combined with gelsemine, which is another drug with a selective influence over cranial neuralgias. For this purpose the pil butyl chloral c. gelsemina (Martindale) is very useful Local applications are not usually accounted of much value in facial neuralgia, but I have found that the lin. aconiti carefully painted with a camel hair brush over the area occupied by the pain is not only helpful in assisting the action of drugs taken internally but that it is in some cases sufficient of itself to cut short an attack. For the vague ill-defined neuralgic and rheumaticky pains of which people not infrequently complain, I have found chloride of ammonium, 20 grains combined with tr cimicifug 20 minims, more effectual than any of the above-mentioned remedies.

One of the most valuable drugs for the relief of neuralgic and neuritic pains, wherever situated, is acetanilid (antifebrin). In spite of its undoubted powers in this direction even where such pains as those of tabes are concerned, it has of late fallen into disuse This has been due in a large measure to the fact that it is credited with the production of untoward effects. This is in reality only partly true. When properly employed, it is no more dangerous than any of the numerous drugs which daily flow freely and callously so to speak, from the point of

the prescriber's pen First, then, as to dose The old official dose of 10 grains is too high at any rate, to start with. It is better to begin with 2 grains which will in many cases be found sufficient. If not, the dose may be gradually increased to 10 or even 15 grains. It should not be increased above the latter if, the physiological effect having been produced, the pain fails to yield. This physiological effect is slight cyanosis The lips and nails become a dusky red. This effect has in a great measure been responsible for the disuse into which the drug has fallen. There is nothing alarming about it, and it is necessary to remember that, as in the case of so many other drugs, the curative virtues of acetanilid very often decline to show themselves until this physiological effect has been evoked. These facts seem worth insisting upon, because apart from morphia, acetanilid is in my judgment by far the most powerful anti-neuralgic at our disposal. It will relieve the pains of locomotor ataxy and of other organic diseases of the nervous system when nothing else will, and he who allows himself to be frightened by the occasional cyanosis which it causes, deprives himself of a most valuable therapeutic agent. That its use requires a certain amount of caution is not a sufficient reason for abandoning it. Acetanilid being practically insoluble in water is best given in cachet, combined either with salicylate of sodium (10 grains) or camphor monobromat (6 grains)

It is scarcely necessary to mention morphia as an

anti-neuralgic except to say that it is not employed as often for this purpose as it might be. It is of course most undesirable that its use should be prolonged, but there is no objection to exhibiting it for the relief of pain pending the action of other remedies For the intense neuralgia which sometimes accompanies true influenza and other acute toxæmias it has no equal Its use in recurrent neuralgias is undesirable not only on account of the patient, but also for the sake of the practitioner who unless he is careful, will find himself urgently summoned at all hours of the day and night to administer the necessary dose This which is unsatisfactory enough is on the whole preferable to entrusting as is too often done a needle and a bottle of tabloids to the all too willing patient

Another unduly neglected means of relieving neuralgic pains in suitable cases is leeching One would not, of course, recommend it in weakly anæmic subjects, but in full blooded individuals the relief it gives often approaches the miraculous This is especially true where the pain seems to be in or to radiate from the ear A leech placed behind the ear and allowed to take its full quantity of blood will often give complete relief where other means have failed.

HEADACHE.—There remains to be considered a highly important peripheral irritant, perhaps the most important of all in the causation of neuralgia, which I have left to this stage that I might discuss it in associa-

which in a very large number of cases supplies the disturbing element is the advance of time As long as a man is young and vigorous his nervous income is equal to almost any strain, but as years wear on this income gradually diminishes, and as he approaches the presbyopic age when another disturbing element awaits him he is always more or less on the margin of symptoms When the presbyopic age is actually reached, and the lens has lost a great deal of its original elasticity, the ciliary muscle has still more work thrown upon it, and consequently such symptoms are liable to be of very frequent occurrence

The nature of these symptoms varies within very wide limits. Neuralgia and headache with which we are for the moment especially concerned, take the first place. Neither the distribution of the neuralgia (except that it is generally cranial) nor the type of the headache affords any indication that it is the eyes which are at fault, so that it is all the more important to keep constantly reminding ourselves of the now well-established fact that where either of these symptoms cannot be traced to any obvious cause eye-strain is, in all probability the main factor in their production. Another common effect of refractive errors is giddiness. This is liable to occasion very considerable alarm to patients, who are generally afraid that it indicates intracranial mischief. To medical men it generally suggests gastric disorders, aural troubles, or circulatory disturbances. These are

all common causes but probably the most common, especially in people about middle life, is that which is least frequently remembered—namely ocular defects which are slight, and therefore unsuspected by the patient.

Nausea and vomiting as we have already seen (*vide* Chapter III) are often due to eye strain In these cases as in most others it is to be remembered that something more than eye-strain itself is generally required to precipitate an attack. That something is often so slight a matter that it altogether escapes notice unless the presence of eye-strain acting as a chronic underlying irritant, is realized In all these cases it is the summation of slight stimuli which produces the effect, and of these slight stimuli that which is constant and ever present is the one whose removal is important. With that gone the others cease to be operative.

But the manifestations of eye-strain are not all so definite as the foregoing[1] The condition indeed expresses itself even more frequently in forms, which until we are familiar with its almost unlimited capacity for producing indefinite symptoms are very difficult of recognition The Autocrat of the Breakfast Table says that it is better to lose a pint of blood from your veins than to have a nerve tapped Now that is precisely what eye-strain does it taps

[1] See The Medical Aspect of Eye-Strain, by Ernest Clarke, *Clinical Journal*, October 1906 Eye-Strain as a Cause of Headache, by L. H. Jessopp, *Practitioner* July, 1906.

a nerve The energy runs to waste and the whole cerebro-spinal system becomes exhausted. When once the outline of this picture is clearly discerned, it is by no means difficult to fill in the detail. For cerebro-spinal exhaustion, though it has no symptoms by which it may with certainty be recognised by the doctor has a very real existence for the patient. In its slighter degrees it may mean no more than the deprivation from a particular viscus say the stomach of its fair share of nervous energy, leading to dyspepsia or it may spell an evident want of control *in the higher cerebral centres, causing irritability of* temper undue emotionalism, or a craving for stimulants. In more pronounced degrees it will cause the grouping of symptoms to which the term neurasthenia is applied. It may cause hysterical ebullitions, and may even be responsible for epileptic attacks. In degrees still more pronounced it may lead to melancholia, and even to suicide. There is, in short, no functional disturbance of any portion of the central nervous system which may not own eye-strain as its essential cause, so that it is impossible to *insist too strongly* upon the importance to every practitioner of being able to detect slight errors of refraction. Into the details connected with the necessary examination it is impossible to enter here, but the following hints may serve as a useful guide.

1. *Objective Examination.*—(*a*) Defects of vision may be suspected if the patient screws up his eyes or places his head on one side in order to

read or to see some object at a distance If there is a hyperæmia of the margin of the lids generally the upper lid, an error of some kind is usually the cause and if a patient under forty years of age presents an arcus senilis, especially if one eye only be thus affected, it is almost certain that the premature degeneration has been brought about by eye-strain of some kind

(b) When the eye is examined by the *indirect* method with a concave mirror and focussing glass Hyperopia is present if the disc is larger than usual and appears to diminish on withdrawing the glass from the eye Myopia is present if the disc is smaller than usual, and seems to enlarge on withdrawing the glass and Astigmatism is present if the disc is oblong and appears to alter in shape on withdrawing the focussing-glass.

(c) By *direct* ophthalmoscopy Hyperopia is present if convex glasses improve the view of the fundus myopia, if concave glasses do so and astigmatism shows itself by parts of the fundus being out of focus, while other portions at right angles are in focus.

2. *Subjective Examination.*—Hyperopia is probably present if the patient's vision is not made worse by convex glasses myopia is suspected if the patient's reading distance is nearer than normal and astig matism, if the patient can read some of the letters in the lowest line of the distant type but makes mistakes even when reading a line half way down or if when looking at radiating lines, put at a distance

of 4 to 6 metres some of the lines look blacker than others.

It must, however be distinctly borne in mind that if the patient is not under the influence of a cycloplegic, these tests, if *negative* prove nothing as he may be and probably is, involuntarily correcting his error

Eye-strain is, however by no means the only kind of chronic peripheral irritation which may give rise to headache. Dental troubles which fall short of gross caries, frequently produce it, overcrowding of the mouth, owing to eruption of the wisdom teeth, being a common and often unsuspected cause. Impairment of respiratory power brought about by obstructions in the nose and throat, are other easily overlooked causes chief among them being deviations of the septum and other factors acting upon one nostril only Aural troubles of every sort should always be carefully examined for

A form of headache which presents special features, and concerning whose ætiology there has been a great deal of speculation, is *migraine*, or hemicrania. The latter name is applied to it because the pain generally begins on one side of the head, and is sometimes confined to that side throughout the attack. The characteristic of migraine is its periodicity The attacks recur at intervals, though not necessarily at regular intervals and their origin is exceedingly difficult to trace. Migrainous people, like epileptics, are always more or less liable to an attack and, like epileptics they have premonitions,

they know the sort of influence which may affect them and immediately after an attack they know that they will enjoy immunity for a variable time The attacks usually begin, significantly enough with some ocular phenomenon, such as flickering lights of various forms and zigzag lines of colours in different parts of the field of vision then follows an intense headache accompanied generally by nausea vomiting and extreme prostration which may last for varying periods. At the end of forty-eight hours the patient is generally well again.

To understand the phenomena presented by migraine we have as in epilepsy to assume some underlying instability of the nerve-centres which are provoked into a stormy condition by stimuli which leave ordinary individuals unaffected. The attacks are common in the studious, in the sedentary in the highly cultured and are rare in the bucolic. In the light of what has been said above on the question of eye-strain and the capacity of this condition to produce a disturbance of nervous equilibrium coupled with the fact that migrainous attacks are almost invariably accompanied by ocular phenomena, very special care should be taken to eliminate this element in every case. A very large number of people have slight defects of vision and such slight defects while harmless to the peasant of robust organization may very readily provide a con stant irritant to the studious of delicate organization, and thus contribute a powerful underlying cause for

the attacks. A migrainous person should be examine very minutely by physician oculist, aurist, an gynæcologist, and any defect in any departmen however slight, which could possibly act as a cau of irritation, should be removed. The physicia should pay particular attention to the cardio-vascul system, the oculist to the state of the refraction an the aurist to any remediable errors in the ear throat or nose. If nothing abnormal can be discovered, the we are reduced to attempting to lessen the genera nervous reactive sensibility by hygiene, diet, and th exhibition of bromides A country open-air life diet free from stimulating foods and alcoholic drinks and the bromide of ammonium in 10 grain doses three times daily for a week every now and again will very often keep the enemy at bay During the attacks rest and a darkened room are essential. When taken in time—that is, before the attack has had time to develop—the phenozone and salicylate mixture above prescribed (see p 160) will often—indeed, generally—act admirably I have found it superior to phenacetin (10 grains) in which some people however express great confidence.

Upon headache as a symptom of *intracranial mischief* it is unnecessary to dwell. When the pain as in migraine, is accompanied by vomiting the fundus oculi should always be examined for anything suggestive of optic neuritis, and careful search should be made for other physical *signs of organic disease* in the nervous system. Intracranial tumours and

meningitis are causes which should always be borne in mind.

There is a certain class of headache which is occasionally described as *congestive*. The term is misleading because headaches due to a diversity of causes might legitimately be so called If however we qualify the term by the adjective mechanical it is possible to recognise a separate and distinct group Headaches due to mechanical congestion are produced by factors which are easily overlooked Anything which interferes with the proper circulation of the blood may occasion them, and in ordinary life tight corsets in women and tight collars in men will be found to be common causes. This type of head ache which is described as a general fulness, aggravated on stooping may be the first indication of the existence of a lesion at the mitral valve so that a complaint of such a nature more especially when it is accompanied by a history of epistaxis should always lead to a careful examination of the cardiac area.

Nasal obstruction whether from enlarged tonsils adenoids or deviations of the septum is exceed ingly likely to cause headaches of the congestive type. The two former are nowadays very readily recognised, and very promptly—perhaps too promptly—removed but the latter is often allowed to con tinue unremedied. Nasal deformities constitute an exceedingly common cause of headache in adults, and as they are nowadays easily remedied there need be no hesitation in advising their radical cure, even

in people who have passed middle life The correctio
of these deformities must be left to the expert, but
would suggest that the most speedy complete an
lasting benefit is to be obtained from the recently
introduced method of submucous resection by which
the cartilaginous and bony obstruction is entirely
removed leaving a fleshy septum, an intact mucosa,
and a clear air-way [1]

Headache is very often caused by *change of climate* The removal of a person from sedative to bracing conditions, and, even more frequently *vice versa*, commonly brings about changes in the vascular pressure which, in the absence of adequate reactive power in the individual (in the convalescent, for example) very frequently cause headache and depression of spirits If these symptoms do not pass off in a few days it may be necessary to resort t[o] treatment Where the headache has been induce[d] by relaxing climatic conditions a mixture contain ing 2 grains of quinine and 5 minims of liq strychnin will generally do all that is necessary Where, on the other hand the climate is too strong, as the expression is, 10 grains each of the iodide and bromide of potassium three times a day will be found useful. In each case the mixture should be preceded by a dose of calomel.

[1] St. Clair Thomson: Proceedings of the Laryngological Society London, May and June, 1904; Transactions of the Clinical Society London, October 25 1905; *Lancet*, June 30, 1906.

Pain in the head of a superficial character such as seems confined to the scalp is a frequent accompaniment of *colds in the head*. In such cases the pain is usually due to a fibrositis of the tissues overlying the skull, and is to be treated on lines already suggested.[1] Headache is a common symptom of *neurasthenia*.

Most headaches are due to what are comprehensively described as *blood-states*. A good instance is supplied by chlorosis, in which the headache is due to the abnormal condition of the corpuscular elements and the same is presumably true where the symptom appears in leukæmia and other associated conditions.

The offending blood-state in the majority of cases is, however a toxæmia. There are numerous familiar instances of this. All the specific fevers are liable to be ushered in with a headache more or less severe and the poisons of alcohol and lead almost invariably cause the symptom. Among the toxæmias due to defective excretion, kidney disease and diabetes are classical instances of causative factors while chronic constipation is probably both the commonest and the most generally overlooked. In all these cases the discovery of the cause immediately points the way to the proper treatment, and some people have endeavoured to aid in the discovery of the cause by mapping out certain cranial areas in which pain occurs, and attaching to each area a particular group

[1] See Chapter I

of causes. Thus, pain which is mainly vertical is said to be due to the following: anæmia, hysteria, neurasthenia, epilepsy and disease of the uterus or appendages. A headache which is chiefly frontal is deemed gastro-intestinal, renal, ocular, syphilitic, or myalgic. An occipital headache is considered suggestive of intracranial mischief and spinal irritation. While believing a great many of these to be fanciful, I think there is no doubt that headaches due to defective elimination, such as those caused by uræmia, diabetes, constipation and impure atmospheres, are generally frontal, and that those which appear in functional nervous troubles seem to have a preference for the vertex; but even in such cases it is not wise to attach much importance to so variable an element as the site.

In everyday life it is certainly the toxins of gastro-intestinal origin which are most frequently responsible for the occurrence of headache. These toxins generally act by interfering with the intracranial vaso-motor mechanism, causing now undue contraction, and anon undue dilatation, of the cerebral vessels. The indications in either case are the same—namely, to cut off the supply of the toxins and to promote the excretion of those already absorbed. The means of doing this are fully discussed in the chapter on Goutiness, so that here it is only necessary to emphasize the importance of dietetic simplicity, such as absence of meat foods and alcoholic drinks, and of excretory vigour by means of purgatives

and diuretics. Stress may perhaps, be laid on the importance of the latter which seem very generally to be neglected. The salts of potassium especially the iodide and citrate are most useful, but the best of all renal stimulants is undoubtedly theobromine. Some physicians, who are possessed by the uric acid bogey object to this drug on account of its close relationship with xanthine and the other purin bodies. An over-curious regard for these would however lead also to the condemnation of caffeine, whose efficacy as a heart tonic in suitable cases is second only to that of digitalis.

Whatever its connection with other bodies with the radical C_5N_4, and however dangerous such a connection may seem theoretically to be there can be no doubt that theobromine is the most active renal evacuant we possess and it may be prescribed with every confidence in all cases where we are desirous of ridding the system of a toxin, such as a nitrogenous toxin which is normally disposed of through the kidneys. It is best given in cachets of 15 to 20 grains three times daily. It occasionally operates as a drastic purgative in which case the dose must be lessened. Some people prefer to give it in the form of diuretin in which it is combined with a salicylate.

In addition to general evacuants it is generally desirable to prescribe measures directed to the relief of symptoms. Where there is reason to suppose that the headache is due to vaso-constriction liq trinitrini

is very useful. Its effect, however is transitory and it should not, for obvious reasons, be frequently repeated. It is best given in conjunction with hydrobromic acid—thus

℞. Liq trinitrini ... . ♏iv
Acid. hydrobrom. dil. ... .. ♏xx.
Aquam ... ... ad ℥ss.
M. Sig Ter die.

Another useful drug for the symptomatic treatment of headache is cannabis indica. If given as the tincture, in combination with other drugs, it must be suspended in mucilage it is therefore better to give it separately in the form of extract, of which from ¼ to 1 grain may be made into a pill with lycopodium and given three times daily

G W Ross, in a valuable paper contributed to the *Lancet*[1] describes a chronic headache which shows itself as a dull, heavy ache worse in the morning and tending to wear off as the day advances, and accompanied by mental and physical lassitude This, he says, is associated with deficient coagulability of the blood, and yields readily to the exhibition of chloride of calcium (see Chapter VIII.).

In very persistent headaches which resist all treatment, it is well to try the effect of a blister on the nape of the neck to be kept open with savin ointment for a week or ten days on end. I have known this expedient succeed where other measures had failed.

[1] January 20 1906.

(*b*) Dr G H. Kenyon strongly advocates the local application of tartarated antimony in lumbago. The ung antimon. tartarat. is thoroughly rubbed into the part twice daily if necessary until the characteristic pustules make their appearance (*British Medical Journal*, January 13 1906)

(*c*) Antiphlogistine (Denver Chemical Manufacturing Company) is a convenient and in some cases at least, a very efficacious form of stimulating local application. Over poultices it has the great merit of cleanliness and asepticity; to fomentations it is to be preferred in that it need only be applied once in twenty four hours. It contains *inter alia* glycerine, boracic and salicylic acids, eucalyptus and iodine.

CHAPTER V

GOUTINESS.

GOUTINESS is a sufficiently common and sufficiently well-understood term but inasmuch as it is also a very elastic one I must begin by explaining the limitations which are here applied to it. First of all then we must exclude acute articular gout and those forms of subacute gout, such as tophaceous as are usually described Neither need we consider such conditions as renal and hepatic calculus These are, in many cases at any rate, truly gouty in origin but they are also in the nature of classical complaints, whose symptoms, diagnosis, and treatment are fully set forth in standard works. With these exceptions the whole field of troubles caused by the gouty diathesis is open to us, but I may as well say at once that I do not propose to try and exhaust it I shall however endeavour to include the most important points and shall seek to lay stress upon those which seem to me to require emphasizing

In considering any question connected with gout, one is immediately brought face to face with

those whose youth has been athletic. Our national pride in outdoor sports might well be tempered by the consideration that the habit of body which these sports engender is very apt to lead to gout in those who having once indulged in them, are ultimately condemned to a sedentary existence. The boy is father of the man, and the man is apt to suffer if he is unable to continue the catabolic activity to which the boy has accustomed the organism. It is said that women do not suffer from gout. This is true only in so far as acute 'big toe' gout is concerned for women certainly suffer very frequently from irregular gout, especially in the form of headache, neuralgia, and bronchitis, and after the menopause they exhibit a very decided tendency to conform to the types such as chronic arthritis skin affections, and dyspeptic troubles, which are so common in men.

The chief cause of gout, in whatever form it may appear is want of balance between intake and output. Either the intake is too great or the output *is too* small. Not infrequently both factors are in operation. *So far as the intake is concerned*, the excess is not necessarily one of quantity Meat foods and alcohol, even when taken in what is usually considered modern tion, by a predisposed person leading an inactive life are very powerful producers of gout and, in the same way a man who takes a great deal of exercise may be very gouty if he indulges too freely in the pleasures of the table. The discovery of a gouty manifestation then, immediately provides two cardinal indications

the one is to check the source of the poison the other is to aid and hasten its elimination. The first of these is met by prescribing and insisting upon a suitable dietary the second by increasing metabolism and invoking the active aid of all the emunctories.

In the matter of diet the most important point is the reduction of the alcoholic drinks. Beers and wines in contradistinction to spirits are often spoken of as peculiarly productive of gout. It is no doubt true that the beer-drinker is more liable to gross and obvious forms of the malady than the spirit-drinker but to argue from this that spirits are harmless to a goutily-disposed person is to play the part of the ostrich. Spirit-drinking though it may not provoke arthritis or eczema, is in the highest degree calculated to cause arterial degeneration and granular kidneys and these, though less strikingly are no less truly gouty in origin than the others. That spirits not being productive of gout, are therefore harmless and even wholesome to gouty people is a heresy which would be ridiculous were it not so pernicious, and no words of condemnation are too strong for him who aids in its dissemination.

Alcoholic drinks of all sorts are in the highest degree harmful to the goutily inclined, and the larger the percentage of the contained alcohol the greater is the harmfulness of the beverage. The first thing to do then, with a gouty person is to make him if possible into a teetotaller The ostrich view of the question should be impressed

upon him and it should be brought home to him that it is practically impossible to check the manufacture of an article *except by stopping the supply of* the raw material.

If we have happily succeeded in this endeavour, our next care should be to convert him into something approaching a vegetarian for after alcoholic drinks, the ingestion of meat foods takes the highest place in the production of the malady In the time of our forefathers there was a saying that the gouty patient should have three meals a day—'one of fish one of flesh and one of neither This may be a useful formula for a recalcitrant patient, whom we are trying to persuade into the paths of physiological righteousness, but it is far indeed from being an ideal dietary The three meals of a person with definite *manifestation of goutiness in any form should contain* neither fish flesh, nor red herring They should consist, for a time at any rate of dairy produce, uncooked vegetables as salads, uncooked *fruits*, and cooked green vegetables, together with eggs. Goutiness, in common with many another chronic complaint may safely be placed in the category of deficiency diseases —conditions, that is, which are brought about by an insufficient supply of vitamines to the economy This being so an intensive vitamine régime is necessary to restore the balance. The cooked foods, except bread should therefore be prohibited. I have found that on such a diet it is not necessary to be as strict in the prohibition of

alcoholic drinks as I used to be. I have often asked patients whether they would prefer meat foods and no alcohol or no meat foods and some alcohol and the smiling reply has always been to the same effect.

It used formerly to be believed that sugar was productive of gout. Although this is now very generally recognised as fallacious, there seems to be some measure of truth in it, inasmuch as sweets are very liable to upset the stomachs of gouty people This they do more especially when introduced into that organ without having been thoroughly insalivated. Gouty people who are afflicted with a sweet tooth as the saying is, should therefore be warned against indulging it unduly and it should be explained to them how they may indulge it with the best prospect of doing so with impunity—namely by efficient mastication.

Another question closely connected with diet, which has been engaging a considerable degree of attention during the last few years or so is the part played by common salt in what we may call the indirect causation of many morbid conditions which are associated with faulty metabolism and insufficient excretion. It has been recognised since 1850 that the chlorides are retained in the body during acute illnesses to be discharged *en masse* as soon as convalescence sets in It has also been known for a long time that œdematous fluid contains a very large percentage of common salt, which is excreted by the kidneys as soon as the

œdema disappears. Another fact which has been recognised for some time is that the amount of NaCl contained in the blood itself is always the same under all normal circumstances, quite irrespective of the amount ingested—that is to say, if more is ingested the surplus is immediately excreted.

Now Widal[1] has shown that in many conditions which are associated with renal inadequacy of which goutiness may be taken as a type, the inadequacy first shows itself by an undue retention of chlorides. The common salt passes out of the bloodvessels into the tissues. Here it attracts to itself fluids, and œdema is the result. This œdema is at first visceral and deep-seated, so that clinically it is not easy to detect, except by careful comparative observations of the patient's weight. And as one would suppose among the first of the viscera to be attacked are the kidneys. They become œdematous, and, consequently to their inadequacy in the matter of chlorides there is superadded a general inadequacy

Thus it is that chlorides though not poisonous in themselves, very easily lead to the retention of other matters and of these other matters, many are highly toxic. Widal has in fact, shown that in kidney affections, uræmic symptoms may be provoked or suppressed at will by largely increasing or greatly diminishing the amount of common salt ingested.

[1] *La Presse Médicale*, June 29 1903 and *Compt. Rend. Soc. Biol.*, 1904. See also *Treatment*, August, 1903, and an article in *The Practitioner* August, 1905 by J H. Bryant.

In view of these facts it is obvious that chloride of sodium constitutes a very grave potential danger to the gouty disposed and we should be particularly careful to warn such against the habit of adding large quantities of salt to their food For the same reason highly salted foods, such as bacon and salt-fish, are better avoided, and those natural mineral waters which contain large quantities of NaCl—and a great many of them do—should not be recommended as habitual laxatives. Widal's work teaches us a further lesson of some importance—namely that the amount of chlorides in the urine offers a very fair gauge of the functional renal capacity of the patient, thus helping us to a very early diagnosis of renal inadequacy

Having by these dietetic regulations so arranged matters that the supply of the poison shall so far as possible be checked, our next care is to help in the disposal of that which has been already formed. To this end a vigorous appeal must be made to all the excretory organs for aid in ejecting the invader. Now it is to be remembered that no appeal to the excretory organs is ever successful which is not accompanied by a liberal supply of fluids. An abundance of water is necessary to the action of each and all of them, and to ask them to excrete poisons without fluid is to ask them to make bricks without straw It is said by those who wish to belittle the spa treatment of gouty conditions that this treatment is successful only because of the large quantities of fluid which

the patients are made to consume. It is not necessary to give adherence to this suggestion in order to learn a lesson from it. If the ingestion of large quantities of water, as water is beneficial at health resorts, it must be equally beneficial at home and certain it is that if a gouty patient can be induced to take, say from 2½ to 3 pints of water in the twenty four hours, he is materially aiding his recovery in a most essential particular

So much being established, let us see when and how the water is to be taken. First and foremost, it should be taken before meals and not with or after meals Half a pint may be taken half an hour before breakfast about half a pint at 11 a.m. the same quantity half an hour before luncheon, and again at 4 30 p.m. before dinner a similar amount, and before bedtime a full pint. This is a large quantity but if all the excretory organs are to be kept working vigorously it is not too much. The question of how the water is to be taken whether *hot or cold*, whether *plain* or *with additions* must be left to individual tastes and peculiarities to decide. Some people will take water hot when they will not take it cold some will take water in which tea has been infused, or to which some fresh *lemon juice* has been added, when they will not take it plain others, again will attach virtues to a water poured from a bottle which they will deny to that which is drawn from a tap These are largely matters of fancy on the

part of the patient and of diplomacy on the part of the doctor the only suggestions on the subject which I have to make are that still waters are preferable to sparkling waters and that lightly mineralized waters are preferable to those which are strongly charged. Inasmuch as fresh lemon-juice is believed, by many observers whose opinion is entitled to respect, to have a beneficial influence upon some at any rate, of the gouty manifestations, it is well to encourage its use for even if it has no other merit—and as will appear presently I am one of those who believe that it has—it can certainly claim to render the dose more palatable

Among drugs which possess a general influence in aiding the elimination of the gouty poison, iodide of potassium stands pre-eminent. There is no gouty manifestation which does not yield in a large measure to its intelligent employment—and by intelligent employment I mean its association with other drugs or measures specially directed against the particular manifestation present. The mistake which is usually made in connection with it is fear of large doses. The ordinary dose of 2 grains is much too small. If the drug is given at all, it should be given in doses which commence at 10 grains, and, curious though it may seem the larger quantity is infinitely less liable to produce coryza and the other symptoms of iodism than the smaller [1] If there is

[1] See Chapter VIII., p. 310.

any suggestion of a rash appearing in consequence of its administration a few drops of Fowler's solution added to the mixture readily prevents further trouble.

Another drug which is very valuable in counteracting the gouty poison, and one which resembles iodide of potassium in the fact that the exact nature of its working is still hidden from us, is guaiacum The two may very suitably be given together in cachet form

℞. Pulv guaiaci }
Potass. Iodid. } .. .. āā gr x.

M. Ft. cachet. Sig.: One three times daily

If the guaiacum causes purging the dose must be reduced, or 5 or 10 grains of creta præp. added to each cachet. In any case the cachet should be followed by a draught of water It is not desirable to give guaiacum in a mixture. Patients readily rebel against it on account of its unpleasant taste and objectionable consistence.

The salicylates, while regarded by some writers as excellent remedies in gouty conditions, are loudly condemned by others, notably in France. The objection urged against the salicylates, especially that of sodium, is that they are depressing and have an irritating effect upon the kidneys. There may be some truth in this but my personal experience with aspirin (10 to 20 grains) has so far been quite

favourable It is, however well to remember the renal charge which is on the Continent, very actively brought against it. Many people complain that the salicylates are inert. When this is true, it will usually be found that they have been combined with alkalies, and I find, in point of fact, that the combination of salicylate of sodium and bicarbonate of sodium is a very favourite one. When salicylates are given they should be prescribed either alone or in conjunction with such a drug as nux vomica, which does not influence their chemical medium for in the body they play the part of acids and it is in virtue of this action that they do good.

Another acid whose virtues in the gouty state have recently been attracting considerable attention on the Continent is phosphoric acid. According to the experiments of Joulie[1] it would seem that gouty manifestations are due to the retention in the blood of matters whose escape is favoured not by alkalies but by acids, and the acid which he has fixed upon as most potent in this connection is phosphoric acid. I believe there is a large measure of truth in his contentions at any rate I have been successful in giving relief with dilute phosphoric acid where iodide of potassium and guaiacum had failed me.

Citric acid, in the form of lemon juice, has often been lauded in the management of the *gouty*

[1] L'Acidité Urinaire, par M. H. Joulie (*Revue Générale de Clinic*, Paris, 1901) See also La Médication Phosphorique, Dr. Jean Nicolaïdi (Paris, Octave Doin 1904)

diathesis. This drug when taken in large doses—say ½ ounce in the course of the day—undoubtedly renders the blood more fluid by precipitating the calcium salts. What it does with these salts is a matter which still seems to await investigation at any rate they disappear from the blood thus rendering the fluid more mobile and better fitted for its purpose of bathing and flushing the various tissues, and so promoting efficient excretion. I believe citric acid to be a most useful general corrective to the gouty tendency

Having now paved the way for the efficient action of the excretory organs by ensuring for them an adequate supply of water and having by the action of the above-mentioned drugs, rendered the process of elimination more easy let us inquire into the best means of setting these organs to work So far as the bowels are concerned, if guaiacum is given, then the quantity in the above cachet may do all that is necessary Where it does not, some purgative salts, preferably sulphate of magnesium, in doses of 30 grains, with nux vomica (*vide* p 112) should be added to the morning dose of water and also perhaps to the evening dose or some of the natural aperient waters which are not overburdened with NaCl may be substituted. Either course is much to be preferred to the exhibition of cholagogue cathartics which are so often recommended. There is no objection to an initial dose of calomel (say 2 to 3 grains) it is an

excellent measure especially in sthenic cases but the practice of a sustained exhibition of hepatic stimulants is much to be deprecated. It was introduced in conformity with the theory that gout in all its forms was due to some dereliction of duty on the part of the liver which could be counteracted by stimulation of that organ As this theory is very far from being established and as the continuous administration of cholagogues has well recognised drawbacks, the practice is not to be recommended. In gouty conditions the liver together with all the portal radicles, require unloading but this may be done quite efficiently with the mixture above prescribed especially when this is occasionally reinforced by small doses of calomel (1 grain) podophyllin (¼ grain) iridin (2 grains) or euonymin (1 grain)

The excretory organs to whose action the greatest importance is, in this connection, universally attached are the kidneys. It is my purpose to avoid as far as possible expressing an opinion about any of the theories concerning the causation of gout, but it is safe to admit that uric acid and the biurate of sodium are both in a measure actively engaged in producing the symptoms of the complaint and as these substances are normally excreted by way of the kidneys, it is obvious that anything which tends to increase renal activity will materially aid the discharge of these matters, and thus lessen the incidence of the manifestations The importance of fluid which

as already stated is considerable in the case of all th excretory organs is here paramount, and water mus therefore be exhibited in full quantities. As aids t its discharge by the kidneys rather than by an other route, it is well to have recourse to diuretics.

There are diuretics, such as digitalis and scoparium which act by increasing the general blood-pressure, including that in the kidneys. As will appear later on, the blood pressure in the gouty already rules over high so that such drugs are carefully to be avoided. The routine prescription of digitalis, bad as it is in cardiac disorders becomes, in conditions accompanied by high arterial tension, *something in the nature of a therapeutic crime*. It increases the arterial tension and acts as a diuretic only when œdema is present. For diuretics in the gouty state then, we must look to those which increase the renal activity without raising the blood pressure—such, for example, as the salts of potassium, the infusion of buchu, and theobromine

Fothergill says that buchu has upon the urinary passages the same inexplicable soothing influence which bismuth has upon the digestive apparatus. This I believe to be true, and it has often seemed strange to me that so valuable a drug should recently have fallen into disuse It is by no means un palatable, and it increases very conspicuously the functional activity of the kidneys. Of the salts of potassium, those which are most used are the citrate

and bicarbonate. No one I imagine now gives these salts in the vain hope of increasing the alkalinity of the blood, so as to obtain the solution of uratic deposits but whatever the motive with which they are given, there can be no doubt either that they exercise a beneficent action over the symptoms, or that they increase very materially the renal activity It is probable that such merits as those and all other alkaline salts may possess are due mainly if not entirely to their action as diuretics and that the salts of sodium even though they be as some are still found to maintain, wrong in theory are useful in practice, owing to their possessing a similar eliminative action.

To insure the adequate discharge of the excreta from the kidneys, we have then, to see first, that enough fluids are being taken. The importance of this is so obvious that it seems absurd to dwell upon it, and in reality my only reason for so doing is to point out that the rule is liable to an exception. If there is too much fluid in the vessels the urine is scanty because there is undue pressure in the kidneys. In such circumstances to increase the amount of fluid ingested is to decrease the amount of urine excreted. If, therefore after a few days the urine fails to increase in quantity the fluids should be decreased until the urine flows freely The next thing to do is to construct a prescription which will include such diuretic drugs as will assist

in the discharge of this fluid by the renal route. If the cachet[1] be discontinued, we can include its *most important* ingredient, the iodide of potassium, in this prescription, which would then be as follows

℞. Potass. iodid. ... ... gr x.
Potass. citrat. ... ... ʒss.
Inf. buchu ... ... ad ℥i.
M. Sig: Ter die.

If as is not altogether infrequent, the patient be anæmic 5 to 10 grains of the potassio-tartarate of iron may suitably be added to this mixture, which should be taken immediately after the three principal meals of the day

There is another time-honoured drug which is not used as frequently in these conditions as it might be—this is spts. æth. nitros. When combined with citrate of potassium and acetate of ammonium, as in the following formula, it makes a very useful and agreeable mixture, increasing notably the flow of urine and acting, to some extent, as a diaphoretic.

℞. Potass. citrat. ... ... ʒss.
Spts. æth. nitros. ... ... ʒi.
Liq. ammon. acetat. ... ... ʒss.
Aquam ... ... ad ℥ii.
M. Sig: In a tumblerful of water three times a day

In connection with spts. æth. nitros. it is important to remember that it must *not* be combined with iodide of potassium as the result is an explosive mixture.

A diuretic of which Professor Huchard speaks in

[1] Page 194.

the highest terms is theobromine He prefers it to diuretin, in which it is combined with salicylate of soda, because he believes that the latter is very liable to irritate the kidneys. Of theobromine (which he prescribes in 10 to 15 grain cachets three times daily) he says It is one of the most powerful and reliable diuretics with which I am acquainted It is by far the best medicament in all cases where we desire to increase the secretory activity of the kidneys, and I prescribe it all the more confidently because it does not increase arterial tension nor has it any effect upon the strength or frequency of the cardiac contractions. It acts solely upon the renal secretory elements.

The natural mineral waters of Contrexéville, Vittel, and Evian have very powerful diuretic properties, and may be prescribed with great confidence for all gouty patients. These waters can be obtained in bottles in this country but it is infinitely preferable to send the patient to the spring itself as there is reason to believe that a measure of their efficacy is lost either in the bottling process or in transit. Of these three places Evian situated on the Lake of Geneva, is much the most agreeable It has a very fine bathing establishment and its waters act very markedly in increasing the renal output.

The next most important excretory organ is the skin. There are several drugs which increase cutaneous activity chief among which is pilocarpine. This is a useful drug in many contingencies and may

occasionally be helpful in the gouty state, but the condition in which it is most generally recommended is precisely that in which it ought never to be employed—I mean uræmic poisoning Pilocarpine induces not only a free flow of perspiration, but it induces also a great increase of bronchial, laryngeal, and tracheal secretion, and if the patient is partly insensible, these secretions may very easily choke him. Those who have a fancy for pilocarpine should reserve its use for patients who are conscious, and avoid it carefully in uræmia and other semi-conscious states. On the question of pilocarpine I may mention parenthetically that it is one of the most useful of all drugs in the treatment of pruritus, whether *local to the anus or vulva, or associated with* a skin disease such as eczema, or even when general, such as sometimes causes so much distress in old age. It should be *given in doses varying from* $\frac{1}{8}$ *to* $\frac{1}{4}$ *grain*, and when combined with atropine say $\frac{1}{150}$ grain it does not cause inconvenient perspiration.

In ordinary goutiness, however the skin is best stimulated by means other than drugs. Pre-eminent among these stands muscular exercise in the open air This should be sufficient, but not excessive sufficient, that is to induce free perspiration without, at the same time giving rise to more waste products than the organs can conveniently deal with. When we are trying to dispose of an excess of a material we must be careful not to pursue a policy which may

have for one of its results the production of that material, or a similar one in increased measure The nitrogenous waste which is produced by muscular exercise has to be excreted for the most part by the kidneys, and it is well that those organs, which already stand in need of stimulation, should have no more work cast upon them than is absolutely necessary

A good substitute for muscular exercise is to be found in baths of various kinds combined with massage. These are undoubtedly best administered at a health resort, under the guidance of an experienced physician who is accustomed so to graduate them as to obtain the maximum benefit with the minimum of fatigue. Hot baths followed by massage may be administered at the patient's own house but when this is done, careful instructions should be given as to temperature and duration. The temperature of the first few baths should not exceed 100° F and their duration should be limited to ten minutes. Both may be cautiously increased until the one reaches 105° F and the other twenty minutes. Each bath should be followed by massage or shampooing and thereafter the patient should be swathed in flannels and encouraged to perspire by the administration of hot water Such baths are, however inferior to the hot wet pack which I shall presently describe.

Turkish baths, though excellent in many respects,

have this against them that very few, if any of the establishments in which they are administered are adequately ventilated, so that the bather especially when he is in the hot rooms, is breathing an atmosphere which is loaded with the cutaneous and pulmonary excreta of others. The home Turkish bath, of which there are now many patterns on the market, is not open to this objection but, then, it is lacking in those agreeable elements of shampooing douching coffee cigarettes and gossip, which reconcile people to the discipline when administered in well-conducted establishments.

Of all the forms of bath obtainable under ordinary circumstances in large towns, that which I have learned to value most highly is the radiant-heat bath. *The addition of light to the hot air certainly seems* to confer upon the latter properties which in the absence of light it does not possess. At the Dowsing Institutes of which there are now a great number all over the country these baths are well and carefully administered They may be followed by massage if so desired but even without this addition I know of nothing so well calculated to stimulate cutaneous activity and to bring about resorption of gouty deposits in properly selected cases.

Of routine household procedures nothing can compare with the hot wet pack. This is an old method, which has become unduly neglected. It is useful in a great variety of conditions and as it is practically

always available I shall describe it in detail. All that is required is a mackintosh sheet, two ordinary blankets, a cotton sheet, a hot-water bottle a pail of boiling water and a wringer all of which except the last-named can be obtained in an ordinary household. The wringer can be manufactured at short notice by hemming in enough of the two ends of a towel to allow a walking-stick to be passed through each end easily The mackintosh is placed on the bed, and on top of it, the two blankets fully spread out. The sheet, having been wrung out of the boiling water is then laid on the upper blanket. The patient is then placed on the sheet, so that his occipital prominence is on its upper margin. With the patient's arms raised, the upper corner of the sheet on his right side is carried across and tucked under his left scapula. With his arms by his sides, the opposite corner is brought across and tucked under his right scapula. Each blanket is then carried across in a similar manner the hot-water bottle is placed near the feet, and the free ends of all the coverings are tucked under the heels. In a period varying from twenty to forty minutes perspiration will be found on the forehead, and that is the signal of sufficiency The temperature taken in the mouth generally shows a rise of 1 or 2 degrees. After a tepid or cold sponging the patient is removed to bed, on which the coverings should not be too heavy Two or even three of these packs may be given in a week. Patients especially children for

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whom they are very useful in many conditions, always enjoy them and an intelligent nursery nurse can be taught to administer them quite satisfactorily

The use of such means as are above indicated for stimulating the skin, derives its importance not only from the point of view of excretion, but also from the point of view of vascular dilatation. One of the effects of the gouty poison (whatever it may be) is to irritate the bloodvessels, especially the arterioles and capillaries causing their contraction, and thus giving rise to heightened arterial tension. Now high arterial tension, if long continued, leaves its mark upon the vessel walls in the form of arterio-sclerosis and ultimately in the form of dilatation and relative insufficiency upon the heart itself. The involvement of the coronary arteries in the sclerotic process may give rise to anginal attacks, and the inclusion of the renal arteries to cirrhosis.

But we need not multiply examples in order to realize the necessity for taking early steps to over come the chronic contraction of the bloodvessels, which is the direct cause of the increased blood pressure. The general measures, dietetic and medicinal, already indicated, especially the avoidance of meat foods and alcoholic drinks, together with the exhibition of mercury and potassium iodide, will in the long run do much in this direction but cutaneous stimulation by means of baths and massage causes prompt dilatation of the vessels over an enormous area which lasts a considerable time and may be

repeated frequently The assistance in combating the condition to be obtained by such dilatation is the secret of a large portion of the success which attends the balneological treatment of these cases.

So much then for the management of the gouty state in general. Let us now consider how we are to treat the various symptoms of this state as they arise in different parts of the body The most important are those which affect the joints causing a subacute or chronic arthritis When this arthritis is a legacy from an acute attack its treatment, in so far as it differs from what has above been indicated resolves itself into that which is laid down in all the text books as proper to the attack itself.[1]

Into the details of this it is not necessary to enter here but I should like to say that where pain is at all obtrusive colchicum is the best palliative and that it is desirable to withdraw the remedy as soon as the pain has subsided. There are however a great many varieties of gouty arthritis which are truly chronic from the beginning attacking various joints, notably the small joints of the hands and the metatarso-phalangeal joints in the feet giving rise to enlargement and deformity rather than to pain. This is the so-called chronic deforming gout, so frequently labelled chronic rheumatism, which is by no means easily distinguished from rheumatoid arthritis especially if we make the mistake of concentrating our attention upon the local manifestations of

[1] See p. 101.

the disease to the exclusion of the general state of the patient. For in the gouty condition there is, as a rule no difficulty in discovering the existence of sthenic manifestations in other organs or tissues whereas in rheumatoid arthritis not only are such manifestations absent, but the clinical picture is essentially one of asthenia, demanding not an eliminative but a generous régime.

The arthritis of chronic gout is probably more amenable to electric light baths than to any other therapeutic measure. The baths, especially when combined with massage bring about the absorption of the deposits with a rapidity and completeness which is astonishing to those who have never tried them. Hot-air baths, douches, and the various measures of a similar kind which are employed at health resorts, stand next in order of efficacy, and where the patient's means permit, it is always well to advise a visit to a suitable spa.[1]

For the rest it is important to insist that chronic gouty joints should not be allowed to become fixed and deformed for want of exercise and movement. Massage is an excellent measure, so is electricity so in fact, is anything which will insure

[1] Vichy and Royat are two places which may be recommended with confidence. Aix les-Bains has deservedly a world wide reputation. Buxton, Bath, Harrogate, Woodhall Spa, and Llandrindod offer exceptional advantages to people who prefer to stay at home. It should be remembered that the ingestion of sulphur waters seldom suits the gouty; their external application does.

regular stimulation. In this direction much can be done by the patient himself and there is generally no difficulty in inducing him to do it, if it is brought home to him that ultimate recovery of a crippled joint depends more upon his willing and intelligent co-operation than upon the assistance of others. Stimulating liniments are very useful adjuncts especially when applied after the part has been steeped in hot water Poultices and compresses containing bicarbonate of sodium or citrate of lithium are also very helpful in reducing swelling and restoring movement.

A method of treating stiff and painful joints which is very highly spoken of by some is cataphoresis by which medicinal substances are transferred to the joint through the unbroken skin by means of the constant electric current. Theoretically the positive pole should be that to be placed in contact with the drug but clinically it is found that some drugs penetrate better with the negative pole and amongst these are iodide of potassium and salicylate of sodium A procedure which has seemed to me to give good results is to paint the part with iodine, and then place upon it a pad of lint which has been steeped in a solution of lithium citrate The positive pole is then placed on the pad and a current of about 10 cells is allowed to flow When the pad is removed the colour of the iodine will be found to have disappeared. Whether this fact has any suggestive effect in bringing about the result I am unable to say

I feel I ought not to leave this *question of gouty or* rheumatic arthritis without saying a word in connection with the reprehensible practice of lightly dismissing joint troubles in children as due to this cause. Such troubles, it is true are seldom labelled gout, but they are labelled rheumatism with a frequency which is far from creditable. The truly rheumatic state in children so rarely takes the form of an arthritis that, apart from the disease closely resembling rheumatoid arthritis and associated with the name of Dr Still, such a condition may almost be *said not to exist. Rheumatism in children shows* itself as chorea, tonsillitis, subcutaneous nodules, erythema, purpura, and the *like* but seldom or never as an arthritis An enlarged or stiff and painful joint in a child, therefore especially if only one joint be involved, is exceedingly unlikely to be rheumatic or gouty in origin, and great care should be taken in so describing it. Such conditions are more often due to tubercle than to anything else Their progress is fraught with considerable anxiety and their treatment demands the utmost care and watchfulness. Numberless limbs have been sacrificed and lives lost owing to the loss of precious time due to the otiose *diagnosis of* a little rheumatism where arthritis in a child has been present.

Of abarticular gout there are a *great many forms.* Chronic pharyngitis is by no means uncommon, chronic laryngitis is common, and chronic *bronchitis* is not rare. The gouty poisons as they affect the

lower air passages seem however to void themselves in acute explosions rather than in chronic irritation. Thus an acute bronchitis of gouty origin is an exceedingly common event. It is important to remember this, because bronchitis is invariably attributed to chill and if we allow ourselves to be beguiled by such etiological suggestions we shall fail to treat the case as it should be treated—namely by mercurial purges and the addition of iodide of potassium and perhaps some colchicum to the drugs intended to combat the bronchial irritation. Asthma is another very common form of gouty ebullition. Inasmuch as iodide of potassium is one of the most useful remedies in ordinary spasmodic asthma failure to recognise its gouty origin is so far as the attack itself is concerned not of much consequence the recognition becomes of importance only when we are considering the best means of providing against further attacks and if we do not realize their true origin our precautionary measures are likely to prove singularly ineffectual. One of the commonest associations of asthma, which is a symptom and not a disease is with high arterial tension. As this important question is considered in some detail later it is here only necessary to call attention to the fact, and to insist that the high tension should be treated by appropriate means, rather than the asthma relieved by habit provoking sedatives.

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irritability mental depression, migraine, and epileptiform attacks.

In the skin the diathesis may show itself as an eczema, a psoriasis, an erythema, and, contrary to what is generally believed, as furunculosis. Boils are commonly regarded as a symptom of asthenia they are especially when occurring in successive crops, in my experience much more often due to the gouty poison. Why this poison should favour the activity of staphylococci in the hair follicles it is difficult to say but that it does so is, to my mind, abundantly clear

An excellent treatment for boils consists in the administration by the mouth of pills of calcium sulphide (1 *grain) three or four times daily (smaller* doses are useless) and the local application of ichthyol ointment (about 15 per cent.) This does a great deal of good where the boil is a 'singleton, relieving very considerably the local pain and hastening *resolution.* Where *however the boils, as is often the* case tend to appear in successive crops, the patient should be subjected to vaccine treatment either by an autogenous vaccine which is seldom necessary or by a stock antistaphylococcic vaccine. The injection of colloidal manganese (*Crookes) I have found very useful*, not only in boils but also in acne. It is put up in suitable doses in ampoules. In the unlikely event of the failure of both these measures, a trial should be made of emetine hydrochloride, given similarly in *doses of ½ grain every other day*

In treating of boils and carbuncles when once

established, a mistake which is often made is that of allowing them to heal prematurely by scabbing with the result that the retained poison shortly seeks exit by a neighbouring hair follicle, and another boil is the result. An old woman's remedy consisting of a mixture of sugar and soap is very effectual in preventing this. A. E. Wright explains this efficacy by showing that this curious combination prevents the lymph from clotting and as a scab consists of clotted lymph the effect of the soap and sugar is to keep the door open for the exit of the poison. It is often said that boils should not be poulticed or fomented, because such applications are apt to produce a crop of smaller ones in the neighbourhood. Poultices are not easily rendered aseptic, but they can be applied with safety if the skin be first smeared with thymol vaseline. Fomentations wrung out of boracic solution are usually quite safe but even here the use of the thymol ointment is an advantage because the vaseline lessens the chance of irritation from slight scalding.

Gouty men tend to become bald early probably owing to vaso-constriction of the arteries in the scalp, and their nails assume a reedy appearance from longitudinal striation.

So far as the other skin manifestations are concerned such as gouty eczema, in the existence of which some dermatologists affect to disbelieve they are to be treated locally according to dermatological rule but if their recurrence is to be prevented their

underlying gouty cause must receive adequate attention on the lines already laid down.

In the eye gouty iritis and gouty conjunctivitis are common These conditions when of gouty origin are less liable to be acute than when they own some other cause and consequently the local treatment need not be so vigorous. A blister and a few hot fomentations, and perhaps a little atropine, are all that is required. If the blood state is properly treated the condition will quickly yield.

In the alimentary tract dyspepsia is very common. The indigestion of gouty people is usually but not invariably of the sthenic variety demanding alkalies and bismuth, but it may, on the other hand be asthenic, and require hydrochloric acid and pepsin for its relief.[1] Another form of indigestion—namely intestinal indigestion—is much more common in gouty people than is generally supposed, more especially in such as take large quantities of alcohol. It takes the form of diarrhoea[2] often accompanied by flatulence It is generally painless and is usually confined to the morning If possible it is well to refrain from interfering with this discharge, the flux should, indeed, be encouraged by mercurial cathartics for the process is entirely beneficial, in that it rids the system of effete matters without irritating the kidneys. Tannigen (10 grains in cachet) is an

[1] *Vide* chapter on Indigestion.

[2] *Vide* Constipation and Diarrhoea, p. 117

excellent simple astringent. Tincture of catechu (1 drachm) is another Whatever is used it is important to remember that neither lead nor opium should ever be prescribed Fasting has now become a recognised rule in the treatment of diabetes and it should be extended to the treatment of gout in all its forms. It is of course not a very popular prescription but with a little firmness and good reasoning the practitioner should have no difficulty in securing its observance especially if he can say that he occasionally subjects himself to the beneficent discipline.

The connection between gout and kidney disease is one which has long been recognised. There exist, however very decided differences of opinion as to the exact nature of this connection and yet the matter does not seem to present any very great difficulties Luff expresses the balance of modern opinion on the subject of gout generally when he says that the disease is due to faulty metabolism giving rise to an auto-intoxication. He goes on to say: This auto intoxication coincides with, or is followed by in the majority of cases a deposition of sodium biurate in certain of the joints or tissues, which constitutes the climax of the gouty attack. I cannot but think that with our increasing knowledge and experience of the disease, uric acid and its salts will in all probability have to be relegated to a position of subsidiary importance in the pathogenesis of gout. The jo manifestations are probably dependent upon more general and much larger conditions than a

is as common an accompaniment of gout as endocarditis is of true rheumatism. The idea would, however be better expressed in English by saying that goutiness is to the arteries what rheumatism is to the heart for in acute gout the poison usually exhausts its virulence during the attacks, which consequently protect the sufferer from the symptoms of goutiness Now if we bear this aphorism in mind it helps us in a great measure to understand that otherwise baffling element of ubiquity which characterizes the symptoms of goutiness, by teaching us to regard these symptoms as due primarily to some dereliction of duty on the part of the arteries in the immediate neighbourhood. Such an explanation does not, perhaps cover all the facts it serves, at any rate to remind us of what in our search after the exact nature of the gouty poison we are sometimes in danger of forgetting—namely that this poison has a particular affection for the arterial vascular system.

Let us now consider its *modus operandi* We have already seen that the gouty poison causes contraction of the arteries It is important to remember *that this contraction is at first functional,* and therefore curable, but that if it goes undetected and unremedied, it becomes organic and therefore incurable. It becomes incurable in the ordinary acceptation of the term, but its effects may nevertheless be mitigated, and in the earlier stages even nullified, by suitable treatment. The functional the curable stage is called by the French the stage of presclerosis and it is, of course, in this stage that it is

desirable to recognise the condition and to set about its treatment For when once the stage of pro-sclerosis is past and the stage of organic sclerosis is entered upon the disease though much easier *to detect, is much more difficult to treat.* Now how are we to recognise this first stage—the stage of pro-sclerosis? Well, it is by no means easy and, as I have already said in connection with goutiness generally the first thing to remember is not to forget it. Because it must always be sought for it never calls attention to itself by any very obtrusive symptoms, and the indications of its presence are very variable The first effect of a general contraction of the branches of the arterial tree will be increased vigour of the heart's action. The cardiac muscle is stimulated by the resistance which it seeks to overcome by slower and more forcible contractions. Now if we keep these two facts in mind, the contraction of the vessels and the increased vigour of the heart's action, the phenomena to which they give rise, individually and collectively are not difficult to follow

First of all, then, with the contracted arterioles we find pallor of the surface more especially of the face cramps and numbness, together with coldness of the legs and feet, and fingers that go dead, slight giddiness and momentary mental confusion which are very liable to be mistaken for attacks of petit-mal, which may indeed degenerate into such attacks unless their true origin is recognised and treated. Further there may be mental lethargy and, although

For family practice the best, because it is the most portable, is undoubtedly Dr Rogers Tycos manometer It has however the disadvantage of being more *than double the price of the others.*

The normal systolic blood pressure in a young and healthy male adult may be taken as 120 mm. Hg In women it is rather lower, say 110 mm. Hg, in children lower still, say 90 to 100 mm. Hg This pressure tends to rise with advancing years. At fifty years of age it may be 150 mm. Hg without exciting alarm at sixty a pressure of 160 mm. Hg is not abnormal and from seventy years onward it may be 200 mm. Hg with apparent impunity Nevertheless, a pressure of 200 mm Hg, even in the aged, must always be regarded with a measure of anxiety and in those under seventy years it presents a danger signal which ought not to be disregarded.

And here let me once more emphasize the fact that high blood pressure does not necessarily indicate renal disease. In many cases, if not in most, the first event is the high pressure, which, if undetected and unchecked leads to arterial disease The particular region in which the arterial disease may reveal itself it is impossible to predict, but the end is just as liable to come with a cerebral hæmorrhage as with a contracting granular kidney

Now, how is this high blood pressure to be lessened? Obviously by removing the poison which provokes it, and by taking such steps as will insure the permanent reduction of its manufacture in the

system Into the general principles which should guide us in these matters I have already entered in some detail, but I may briefly recapitulate those which have a special bearing upon the question under consideration

First then as to diet, without careful attention to which it is quite hopeless to attempt the treatment of high arterial tension of gouty origin. The embargo upon meat foods must be absolute and under meat foods, let it be clearly understood are included fish poultry and game. Alcoholic drinks, tea, and coffee must also be absolutely forbidden The patient must be encouraged to take fresh fruits and vegetables freely What I have said about the great importance of taking plenty of fluid in the gouty state generally must be accepted with considerable reservation in the case of high arterial tension. If the excretion of the extra fluid can be insured, then the extra fluid can do nothing but good. If, on the other hand, an appreciable portion of it remains then, by increasing the actual quantity of blood in the vessels, and by thus adding to the state of tension, it is liable to do harm. For this reason, a flushing policy though excellent when it succeeds, should in the first instance, at any rate, be undertaken with caution. The emunctories must, nevertheless all be urged to do their part in ridding the system of the gouty poison, and the purgatives diuretics and sudorifics already referred to must be pressed into the service.

So far as purgatives are concerned, nothing can

compare with mercury and for a diuretic it is as well to use that which has been so highly spoken of by Professor Huchard, to whose teaching we owe almost all our knowledge of the pre-sclerotic state—namely theobromine (see p 205) The waters of Evian, Contrexéville, and Vittel are admirable aids to all diuretic drugs, and would seem, especially the first named, to possess a special value in the condition we are discussing The best means of stimulating the skin—that is, by warm baths and electric light baths—have already been referred to. Another excellent general measure—namely massage—is capable of rendering yeoman service in states of high arterial tension, especially when applied to the abdomen for it helps to dispel ' abdominal venosity and to pass the blood rapidly through the organs which are credited with being actively concerned in the manufacture of the gouty poison. This which is mere recapitulation, refers to general measures, the importance of which should never be lost sight of.

We now come to the question of our ability to act directly upon the high blood pressure and to reduce it by means medicinal or otherwise Do such means exist? Well, they do but none of them are satisfactory for the reason that their action is very transient, and their continued employment is by no means unattended with danger. First among them stands blood letting Where we find ourselves in an emergency face to face with a threatening of cerebral hæmorrhage or an anginal attack, no one would I presume hesitate to abstract blood from the arm to

the extent of half a pint or more. But it is obvious that this is a process which cannot be often repeated, and as the high arterial tension depends less upon the quantity of the blood than upon the state of the vessel wall, it is useless to reduce the one (especially as the reduction cannot be maintained) without influencing the other

And a similar objection applies to the drugs hitherto introduced for this purpose. Nitrite of amyl, though entirely trustworthy in emergencies is incapable of prolonged action. Trinitrin is in reality only a degree better It takes longer to act than nitrite of amyl and its effect is maintained for a longer period but the relief it gives is ill-sustained, and it cannot be frequently repeated. The same objection applies to erythrol tetranitrate (1 grain in tablets three times daily) though to a much less extent. Thyroid extract seems to act beneficially in a good many cases, and where tachycardia is not yet present it may be tried with considerable confidence. In the high arterial tension which is so common with women at the menopause some observers claim to have had good results with ovarian extract. The physiological basis for its employment is certainly sound, and if it does no good it can do no harm. Aconite has been recommended by some people and chloral extolled by others. The employment of both these drugs is, how ever fraught with such obvious drawbacks that it is scarcely necessary to consider them.

In the way of drugs, then, there is nothing upon which we can, in the present state of our knowledge,

depend for a definite and sustained action of a specific nature, without incurring risks which it does not seem to me that we are justified in taking. And this is perhaps all to the good, for if we had such a drug we might be tempted to use it to the exclusion of those general principles of diet and hygiene on which the successful management of the gouty diathesis is known to depend, and on which, especially when combined with the judicious employment of mercury and iodide of potassium full reliance may always be placed.

It must not be concluded from the foregoing that an abnormally high blood pressure is of necessity so evil a thing that, when discovered, all our efforts must be directed to its immediate reduction. So far is this from being the case that a rapid reduction of arterial pressure as by means of nitrite of amyl, may very easily be attended by fatal results. We have to remember that the arterial pressure must *always* be higher than the venous pressure If it is not, the medulla is starved, and the patient dies. If therefore, the venous pressure is unduly high (as, for example, in mitral stenosis) there must be a coincident and corresponding rise in the arterial pressure, and the manometer will register a very high figure. The indication here is to reduce not the pressure in the arteries but that in the veins. To attempt the former is to interfere with Nature's dispositions for the continuance of life.

The same considerations apply when the arterial

pressure rises in response to an augmented intra cranial pressure. In order to secure that the blood shall reach the medulla in spite of the obstacle thus provided, the blood pressure in the arteries is in creased commensurately with the increase of pres sure inside the cranium. Here again the manometer will show a very high reading but if we allow our selves to be beguiled into reducing the arterial pressure by venesection or other means, we shall surely place the patient in imminent danger of his life. It is essential to remember that high blood pressure is not a disease *per se*, and although in many cases—the majority perhaps—it is very desirable that it should be reduced, there are nevertheless others in which its thoughtless reduction would certainly be attended by very serious consequences.[1]

But if it be true that high blood pressure is in the minds of many ineradicably associated with renal disease it is even more strikingly the fact that albuminuria is still regarded by many more as a condition so desperate as to require an undertaker rather than a physician. Inasmuch as this attitude creates a great deal of unnecessary alarm and inflicts great injustices, it seems profitable to consider the question here

The most convenient method of dealing with the

[1] See The Vagaries of Blood Pressure (*The Hospital*, June 22, 1907); and Blood Pressure and the Nervous System (*Clinical Journal*, October 2, 1907). Also article Blood Pressure in Murphy's Practitioner's Encyclopædia of Medicine.

subject would seem to be briefly to review the physiological aspect of the matter, and see what light is to be obtained therefrom.

We have it on the authority of Virchow, Martin Hofmeister and others that albuminuria is the rule with new born babies. The amount of albumin is at first abundant, but diminishes gradually until by the fourteenth day it has completely disappeared.

Adolescents, who are apparently in good health, are subject to what is described as cyclical or postural albuminuria, a phenomenon which is now admitted on all hands to be devoid of pathological significance. *Amongst adults of mature age, military men* and doctors Leube and Furbringer have described a considerable number of cases of this postural or cyclical albuminuria, unaccompanied and unfollowed by any morbid tendency

Adolescents, who are undoubtedly in good health very easily develop albuminuria as the result of fatigue. This has been conclusively shown by W Collier, of Oxford [1] who examined young men in training for races, men who may therefore be assumed to have been in a high state of physical and physiological efficiency In a very large percentage (from 57 to 100) of these young men albumin appeared in the urine a short time after hard exercise to disappear again after a period of repose.

According to Playfair [2] albuminuria occurs in 20 per

[1] *British Medical Journal*, January 5 1907 p. 4.

[2] *Handbook of Midwifery* 2nd edition, vol. I p. 222.

cent. of pregnant women after the third month and in a much larger percentage of primiparæ. Some of these cases it is true progress to definite renal disease, but the vast majority suffer no inconvenience from the occurrence of the symptom

Finally there is Senator's statement to the effect that every urine will be found to contain albumin if sufficiently concentrated.

The foregoing are all of them, admittedly physiological conditions, the significance of which it is necessary to explain if we would realize the meaning of albuminuria as it occurs in conditions which are not physiological. Now it is universally conceded that albuminuria may be caused by a congested state of the renal vessels, a fact with which we are all familiar in heart disease and similar conditions. Perhaps the most striking instance is afforded by the albuminuria due to injuries of the spinal cord in which the vaso motor nerves are paralyzed. But lesser degrees of congestion will produce the same results. Chills to the surface for instance as after cold bathing especially in the sea, are known to provoke the appearance of albumin in the urine presumably by increasing the amount of blood in the splanchnic area, and thus inducing a transient renal stasis. Let us see what bearing this has upon the physiological albuminurias just mentioned.

The newly born infant is but partially adapted to the new conditions to which he is suddenly subjected. Most of the powers which he subsequently develops

are in a very embryonic state. More especially is this true of the co-ordinating or controlling power He can, for instance, use muscles but he has not learned to co-ordinate them. His sphincters act, but he is unable to control them. These powers are developed only by degrees and by training We must, I think, assume the same to be the case in a much higher degree with the complicated mechanism of vaso-motor co-ordination and control. The blushing and pallor which occur involuntarily on any slight emotion, even at a very much later period, are sufficient to show that this mechanism is an exceedingly delicate one which demands a considerable amount of training and adjustment before it can be considered to be in good working order When a baby comes into the world he leaves a warm and equable climate for one which is cold and liable to considerable variations. However carefully he may be protected from such influences they are bound to reach him to the extent, at any rate, of causing very decided differences in the balance of blood distribution to which he has hitherto been accustomed. His skin is now for the first time, called upon to contract, and this contraction causes the blood to seek refuge in the organs of the splanchnic area. The vessels in this area have not yet learned how to behave in the presence of such an influx and the organs suffer a certain degree of congestion. The renal vessels are among those affected, and an albuminuria results. After a few days the splanchnic vessels learn their

lesson, the congestion is gradually reduced and the albuminuria disappears.

The case of the adolescent is not very different from that of the new born baby As the boy is being transformed into the man and the girl into the woman, new activities are developed, which place an enormous strain upon the delicate vaso-motor mechanism, which tends in consequence to fail. Failure of this mechanism is almost invariably in one direction—in that, namely of undue vaso-dilation. The calls upon the nervous system are so considerable and so pressing that the tone of the peripheral arteries is not adequately maintained with the result which always ensues in such circumstances namely that during the erect posture the blood collects in the capacious vessels of the splanchnic area. Then ensues a congestion in the renal vessels with consequent albuminuria. So long as the patient is recumbent the blood does not tarry unduly in the splanchnic area there is no renal congestion and no albuminuria. No sooner however is the erect posture assumed than the albumin reappears. The fact that in some of these cases the albumin diminishes or disappears towards the end of the day only signifies that by that time the vaso-motor mechanism has been provoked into a sense of its responsibilities, and has realized the necessity for contracting the splanchnic vessels in response to the change of posture. This postural or cyclical albuminuria is quite common in people who have been obliged to keep their beds for

in the splanchnic area are contracted, while those which supply the muscles actually in use are dilated. After the exercise is over there is a reaction, which varies in degree directly with the magnitude and duration of the effort. After severe and prolonged exertion, therefore, the splanchnics dilate, and the muscular vessels tend to contract. If this contraction is hastened, as it generally is in young men at Universities and public schools, and as it was in all Dunhill's[1] cases, by a cold shower or plunge, the blood is driven inwards with such rapidity that a renal congestion is produced, and albuminuria results. It is probable however, that, apart altogether from the cold shower, the reaction from the conditions which necessarily obtain during active exercise are sufficient to induce a renal stasis, more especially in young men in whom we have seen the vaso-motor response to be but partially educated. It seems, however, that this may not be the whole explanation, for not only is the composition of the blood materially altered by vigorous exertion, in that the waste products are largely augmented, but the sudden and considerable elevation of blood pressure entailed by such exertion is of itself sufficient to provoke a transient albuminuria.

The presence of albumin in the urine of pregnant women after the third month is obviously mechanical. The enlarging uterus, even if it does not exercise direct pressure upon the renal veins, materially alters

[1] *British Medical Journal*. April 27 1907 p. 1001.

the distribution of pressure in the splanchnic area, and if the normal compensatory mechanism is not in good working order, a stasis with consequent albuminuria is not difficult to imagine. It is a significant fact that such an albuminuria is more common in primiparæ.

We have, then, in albuminuria a symptom which may occur and constantly does occur in conditions which are purely physiological. We know further that it occurs in states which though pathological in various degrees, are nevertheless not such as even to suggest that the kidneys are at fault. I have already mentioned cardiac disease and spinal injuries, but these by no means exhaust the conditions in which albumin is frequently if not constantly found in the urine In pronounced myxœdema it is a classical and well known finding and it is also well known that the albumin rapidly disappears under thyroid treatment. It is by no means uncommon in minor degrees of thyroid insufficiency In certain conditions, which are wrongly labelled obesity which are nearly related to myxœdema, though quite distinct therefrom as shown by the fact that thyroid extract has no beneficial influence upon them, albumin is often present in the urine in very large quantities, and disappears rapidly under suitable treatment. Albuminuria is very commonly present in chlorosis, in Graves disease in tonsillitis, even other than diphtheritic in some forms of dyspepsia, and in almost all cases of hepatic congestion in migraine, in epilepsy

Very often, of course the meaning of an albuminuria is sufficiently obvious It is seldom indeed, that we find ourselves in doubt about acute nephritis, or chronic tubal nephritis, or amyloid disease. In these cases and in gross tuberculous renal lesions, the coexisting symptoms are almost invariably such as to point unmistakably to the true source of the albumin. The cases which give rise to perplexity are those in which the albumin constitutes the only, or almost the only symptom. In such cases one has no right to express anxiety much less to pronounce a sentence of incurable disease, unless in addition to albumin the urine also contains definite evidence of structural disturbance in the kidneys. This ought to be an absolute rule which permits of no exceptions. Such evidence is afforded by the presence of epithelium, of blood, of tube casts, more especially of the granular or fatty variety Hyaline casts, although they are suspicious, have not the same significance, for not only may they be found in small numbers in almost any urine if sought for with sufficient diligence, but they are often present in large numbers in nervous and febrile conditions which have no renal connection. It must be admitted no doubt, that a specific gravity of less than 1015 is a suspicious factor, but inasmuch as nervous people very often have urine of low specific gravity it affords no excuse for any relaxation of the above rule.

CHAPTER VI.

MINOR GLANDULAR INSUFFICIENCIES

In every question into which endocrinology enters it is necessary to bear in mind the important fact of the interdependence of the glands which constitute the system I am fond of comparing them to the eight rowers in an outrigged boat with the central nervous system as cox. These rowers are all pulling in the same direction they are nevertheless some of them pulling one against the other Now in our clinical dealings with these glands, we are much too apt to regard each as an independent entity instead as we ought, to consider each as a member of a hierarchy the whole of which is liable to be deranged when one of the members is seriously affected. As bearing on this generalization let me indulge in another It is the evil fashion to speak of hyper or hypo functioning of certain glands. Such a nomenclature expresses but a part of the truth and that part a very misleading one. It is no doubt true that in the various degrees of myxœdema, for example, the thyroid is primarily at fault; but the outstanding

symptom which brings the patient to the doctor may point insistently to failure of some other gland. This occurred quite recently to me. A man of forty five came complaining of sexual impotence gradually acquired. He *turned out to be* a case of mild atypical myxœdema, appropriate treatment for which rapidly restored his sexual capacity It also restored his domestic peace, which had been seriously impaired by unfounded charges of infidelity Now, misleading as *it generally is to speak of underaction of* a particular gland, it is much more misleading—it is, indeed generally a misstatement—to speak of over action of any single gland.

Let us take the thyroid again. It has become a habit with many who ought by now to know better to speak of Graves disease as synonymous with hyperthyroidism. Now although the thyroid gland may be overactive in Graves disease, it is so in common with other glands—notably the suprarenal, the pancreas and the thymus—and the salient symptoms of the disease are due much more to the latter than they are to the thyroid which, it is well known is frequently not even enlarged. Whatever else it is or is not, Graves disease is not a pure hyperthyroidism.

In the matter of underaction, it is generally *evident* that *one* gland is primarily at fault in the matter of overaction that is seldom the case, except where there is a definite and *local organic* irritant—

such for example, as suprarenal and pituitary tumours. The cause of overaction is generally a toxæmia, which irritates not one gland only but many though in different degrees. In looking for a cause of underaction, it is always well to remember the possibility of long continued toxæmic overaction leading to exhaustion of the gland or glands in question. This is a frequent cause of thyroid insufficiency because the thyroid above all others, is concerned in combating endogenous toxins. That it is a cause of pituitary insufficiency I hope to show presently Then again we must always bear in mind that when we have given say thyroid extract with success, our good results do not necessarily mean that the patient was lacking in thyroid essence. The good results may mean and in many cases I am sure they do mean, that the extract has stimulated an opponent gland—say the suprarenal or the pancreas—to increased effort. So that in giving the extract we are not necessarily supporting a flagging thyroid we are possibly rousing a lazy suprarenal. We are in fact, restoring the balance by indirect means.

If we consider the symptoms which in the various monographs are confidently attributed to the failure of the particular gland in question—say the thyroid the pituitary or the renal—we cannot fail to be struck not only by the resemblance between many of these symptoms, but with their practical identity With

substates of the thyroid for example, we are accustomed to associate adiposity infantilism, subnormal temperatures and subjective frilosity a slow pulse, somnolence and mental hebetude, together with hairlessness and dermic pigmentation. In substates of the pituitary we find that all these conditions are not only present but are regarded as characteristic —if not pathognomonic In the case of adrenal insufficiency some of them—notably the infantilism—the low temperature the hairlessness and pigmentation are prominent symptoms It is therefore evident that when one member of the endocrine hierarchy is at fault, the mere disturbance of the glandular balance is sufficient to produce certain symptoms of which one can only affirm that they point to a disturbance *somewhere in the endocrine system—the* pluriglandular syndrome as it is called. There are some indications though so far they are not many which enable us to say which gland is probably the primary offender

Confusion is most likely to arise between insufficiency of the thyroid and pituitary insufficiency Adrenal inadequacy, though it may in its very early stages present some features which might lead to a mistaken diagnosis, is nevertheless as a rule sufficiently distinctive in its evolution. Here there is never adiposity the change in bulk if any is always in the direction of emaciation. Moreover, however much the general symptoms—such as asthenia,

irritability and depression—may suggest thyroid or pituitary insufficiency the urgency of the gastro-intestinal symptoms should prevent any mistake These are anorexia, diarrhœa, and vomiting of a nature progressive and intractable, which are usually accompanied by pain and tachycardia

It is necessary to draw a distinction between adrenal insufficiency and Addison's disease. The tribute of the suprarenal glands to the blood-stream may become deficient from various causes. Addison's disease which is due to tuberculosis of the glands—a tuberculosis which is always primary to those glands—is only one of the causes. Its original description was so vivid and the complete clinical picture which it presents is so striking, that it has tended to obscure the minor manifestations of the glandular difficulties much as myxœdema in its complete form so long obscured the lesser degrees of thyroid insufficiency Perhaps the most striking objective signs of adrenal insufficiency are to be found in the vascular system. The tone of the bloodvessels is below par as evidenced not only by the manometer but also by the instability of the pulse and the absence of reserve power in the heart itself. This, when accompanied by a subnormal temperature, as is usually the case, and somnolence, with an over readiness to fatigue physical and mental may easily give rise to a suspicion that the thyroid or pituitary is at fault but, as I have already said, the

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emaciation, which is characteristic of suprarenal insufficiencies, is not often seen in these others and the gastro-intestinal troubles seldom or never Difficulties may nevertheless arise when, as frequently happens especially after acute specifics, two or more of the endocrine glands are simultaneously exhausted.

With these preliminary reservations duly recorded, we can proceed to consider a few of the glands individually First then as to the thyroid. Here we are entitled to speak of a primary *insufficiency* We know that there are many clinical manifestations of this condition such are the troubles in the skin and its appendages, the slow pulse, the sensitiveness to cold the muscular fatigue, the mental hebetude the intestinal stasis, the menstrual disturbances, and in children night terrors and nocturnal enuresis. Hertoghe, of Antwerp long ago pointed out that these and other symptoms might all be reduced to a causal common denominator which is expressed by the word *infiltration* The thyroid is the great activator of metabolism, and when the fires burn too slowly material is deposited in various tissues. We may call this material mucin if we like its name is less important than the fact that it is a product of inadequate metabolism which is liable to be deposited, capriciously so far as we can see, in any tissue or system, thus giving rise to very diverse findings. Just as a person with a high blood pressure may bleed from anywhere, so a person with

thyroid insufficiency may become infiltrated anywhere. The selection of the site of the infiltration is even more difficult of explanation than the selection of the site of the hæmorrhage. And when we consider the matter it is not difficult to realize that a very slight degree of infiltration may bring about serious results. A slightly infiltrated endocardium an infiltrated intestinal mucosa an infiltrated endometrium may very easily produce a train of symptoms sorely baffling to the clinician who fails to remember slight thyroid insufficiency and its powers of depositing unwelcome material in unsuspected and unlikely places. With this general outline in view it is possible to form a mental picture of the method of production of almost any of the many morbid manifestations which we have come to associate with thyroid inadequacy but in so doing we must be careful not to forget the possible responsibility of other glands for some, at any rate, of the details of the complete picture. Of the thyroid more than of any of its congeners it may be asserted that when it fails to ring true the others inevitably become jangled and out of tune. It is the leader of the glandular orchestra.

This statement, correct though I believe it to be seems less so to-day than it used to seem Some years ago it was thought that the parathyroids were mere accessory or supplementary or immature thyroids, and commercial manufactures of thyroid extract included in the produce thus labelled not

only the thyroid gland itself, but the imbedded para thyroids. Since it became evident that the old view was incorrect and that the parathyroids were possessed of functions distinct from and, according to some observers even antagonistic to the thyroid proper manufacturers have been careful to separate these glandlets from the thyroid itself, with the result that when we now prescribe thyroid extract we are exhibiting the pure article, whereas in former days we used to exhibit thyroid plus parathyroid. This is liable to make a serious difference in our results and when I now fail with thyroid where I confidently expected to succeed I generally find that the addition of a small dose of parathyroid say one-twentieth of a gram, brings about the desired result. It must therefore be kept in mind that where in the pages which follow thyroid medication and thyroid feeding are mentioned it is to be assumed that thyro-parathyroid medication and feeding are referred to There are, *of course still those who deny to the parathyroids* any particular part in the endocrine hierarchy In spite of these, however clinicians have satisfied themselves that the extract of these despised gland lets when orally administered do bring about very satisfactory results in certain cases. Their action may be summed up by saying that they have a very favourable influence upon calcium metabolism and on certain conditions of auto-intoxication for these glands would seem to have a very definite part to play in the defensive mechanism with which the

view as to the essential factor in rickets It was first advanced by Professor Marfan in 1907[1] and upheld in an interesting paper which does not appear to have attracted the attention which it deserves. My own experiences have convinced me that the view is correct If it be true anywhere as the adage has it that *naturam morborum curationes ostendunt*, it is pre-eminently true in the sphere of opotherapy and every case of rickets in which I have employed thyroid extract has shown such decided improvement as to leave no doubt in my mind that thyroid insufficiency is the main causative factor in the disease

As a child progresses in years deficiency in thyroid secretion may reveal itself in various ways One of the most dramatic and alarming is the production of night terrors. I do not pretend to be able to explain the association between these unpleasant ebullitions and a deficiency of thyroid essence in the circulation, but I can most positively affirm that they rapidly disappear under the influence of thyroid extract I have already shown that nocturnal enuresis[2] though it may own other causes such as phimosis or intestinal worms is in the vast majority of cases caused by thyroid inadequacy and is readily curable by the administration of thyroid extract In the

[1] *Le Rachitisme dans ses rapports avec la déformation ogivale de la voute palatine, etc., La Semaine Médicale* September 18, 1907

[2] Adenoids, Nocturnal Enuresis, and the Thyroid Gland (Bale, Sons and Danielsson, Ltd. 1909).

same connection I discussed the question of adenoids and made so bold as to suggest concerning them that they constituted one of the stigmata of thyroid insufficiency The views expressed may be briefly summarized as follows Adenoids and enlarged tonsils occur in children who have an inadequate supply of thyroid secretion. The hypertrophic condition in each case is apparently the result of an endeavour on the part of the organism to supply an internal secretion as nearly allied as possible to the one which is lacking If the hypertrophy is not very pronounced and if it has been not very long in existence great enough and protracted enough that is to produce complications, such as disease in the tonsils themselves or in the ears then the exhibition of thyroid extract will cause their regression It is only when medicinal means have failed that operative interference becomes justifiable.

Enlarged lymphatic glands so often observed in the necks of weakly children *are not infrequently* due to thyroid inadequacy Whatever their position and accompaniments they are usually quite confidently attributed to tubercle, and are treated as such with more or less indifferent success Arthur Latham long ago pointed out that even where their origin is undoubtedly tuberculous, there is no justification for removing them until other means have failed. *But these glandular enlargements are less often due* to tubercle than is commonly supposed I have seen a good many children thus afflicted to whom I

the matter it is convenient to call attention to the very depressing effect which real influenza at all ages is liable to exercise upon the functions of the thyroid I say real influenza in *contradistinction to the* transitory febrile attacks which are diplomatically so labelled to satisfy importunate relatives who thirst after a label Real influenza as is well known produces a degree of subsequent mental and physical asthenia which defies the ordinary tonics and remains obdurate to everything except time Such at any rate was my experience until on the theory of thyroid exhaustion, I began treating these cases with thyroid extract The results of this treatment have always been gratifying, and I have no hesitation in affirming that if we were to realize more fully the exhausting effects upon the thyroid, and indeed of the endocrine system generally of all acute specifics we should be much more successful in dealing with the period of convalescence, which to some natures is even more trying than the disease itself

This defensive power of the thyroid secretion is one which deserves to be emphasized. When it has attracted the general attention which it certainly merits we may look for good results from the exhibition of thyroid extract during the course of all acute specific diseases. It should be remembered that, if it be sought for an enlargement with tender ness of the thyroid will be found to be present in a large number of febrile diseases notably in acute

rheumatism The headache which is so often present in such cases may reasonably be attributed to the pituitary and the asthenia to the suprarenals

Let us now return to our chronological order and proceed to consider the troubles imposed by thyroid inadequacy as the years advance We had arrived at the age of puberty at and after which boys may be dismissed as affording an interest which is but occasional and fortuitous Of girls it is a truism to say that the establishment of the menstrual function constitutes a crisis no less critical than that which occurs at the menopause but it is insufficiently realized that at both periods the pivot round which the critical phenomena revolve is the behaviour of the thyroid gland That there is a certain physiological antagonism between the internal secretion of the ovary and that of the thyroid is well established,[1] and the observed facts go far to prove that the activity of the ovary normally provokes a corresponding activity on the part of the thyroid The clinical evidence of this is provided by the enlargement of the thyroid which is to be observed in the majority of women at each menstrual period It is obvious then that given a girl with a congenitally inadequate thyroid, the advent of menstruation will serve to emphasize that inadequacy and thus bring into view various symptoms which up to that time

[1] Cardiopathies of the Menopause, *Clinical Journal*, March 3, 1909.

had lain dormant One of my cases of nocturnal enuresis[1] was certainly due to this cause. Without going much more fully into the matter than my present purpose permits it would be impossible to offer an explanation of a clinical fact of which any one may easily convince himself—namely that both dysmenorrhœa and menorrhagia are more frequently than not due to an insufficiency of thyroid secretion. Persistent amenorrhœa whether it be congenital or acquired, is almost always due to hypopituitarism and can generally be cured by pituitary feeding [2]

That simple enlargements of the thyroid are due to an insufficiency of the internal secretion of the gland is now generally admitted.[3] That migrainous attacks, more especially such as affect by preference the menstrual period are due to the same underlying cause is a proposition which originated with Leopold Levi and H de Rothschild [4] and has been supported by numerous subsequent observations by these authors and by others Of dysmenorrhœa and menorrhagia enough has already been said. To this list of the disabilities which an inadequate thyroid may impose upon the female sex I would add one more—namely sterility From the fact that the thyroid enlarges during pregnancy it may be taken

[1] Adenoids, Nocturnal Enuresis, and the Thyroid Gland, p. 27

[2] The Byways of Thyroid Inadequacy *American Medicine*, April, 1914.

[3] Organotherapy by H. Batty Shaw (Cassell and Co.).

[4] Hertoghe, *op. cit.*

as certain that the maternal economy requires an additional amount of the internal secretion during that period and it is evident that if this additional quantity be not forthcoming the pregnancy will be brought to an abrupt termination. In the case of women whose thyroid activities are markedly in adequate, this unhappy result will occur as soon as the first strain is put upon the gland—that is when the next menstrual period is due Many women who are labelled as hopelessly sterile are so only because of the general failure to recognise the paramount importance of the thyroid gland in the function of reproduction I have known at least one case in which the repeated abortions were confidently attributed to syphilis, in which nevertheless the administration of thyroid extract brought a preg nancy to a most satisfactory conclusion Where thyroid feeding alone is ineffectual it is well to associate it with pituitary feeding The addition of suprarenal feeding may even be necessary

So fascinating and, in a sense so facile is the diagnosis of thyroid insufficiency that it threatens soon to supplant gout in the position so long held by the latter as the last resort of the perplexed practitioner When you have been fortunate enough to produce strikingly good results by prescribing thyroid extract you are tempted to attribute a great many ills to thyroid insufficiency which have no necessary connection therewith To this mental attitude must be attributed the tendency of the

moment which is most apparent in France towards blaming the inadequate thyroid for many mutually exclusive diseases From the already formidable list of maladies for which the responsibility has been cast upon the thyroid, two seem to deserve more than a passing notice one of these is rheumatoid arthritis the other is chorea Now neither rheumatoid arthritis nor chorea is to coin an expression, a self-contained disease each of them represents a group of symptoms which may be produced by several different causes In both thyroid inadequacy may occasionally play a leading part but either may occur in patients who do not show nor ever have shown the slightest sign of insufficient action of the gland It has fallen to my lot to produce very brilliant results with thyroid medication in both these conditions but in the majority of the cases so treated the results have been negative. In these diseases and many others it is to be presumed that an insufficiency of thyroid secretion provides a soil which is favourable to the unhindered action of the toxins and that consequently the rectifying of the inadequacy will do much to protect the individual against invasion though it can seldom ameliorate matters quickly enough and profoundly enough to influence the results of an invasion which has already succeeded Chorea is often very favourably influenced by thyroid extract, but only in those who are definitely subthyroidic. In those who present none of the ordinary stigmata of thyroid

inadequacy the extract does not succeed Rheumatoid arthritis may be due to many causes of which pyorrhœa tubercle and thyroid or other internal glandular inadequacy are only some The commonest and the most potent is a toxæmia of intestinal origin If the stigmata of thyroid insufficiency are apparent in any individual case thyroid extract will probably give good results, but even then only when combined with other accredited measures directed to the removal of the causative toxæmia

Women who have been perfectly healthy all their lives very often display a marked tendency to thyroid insufficiency about the time of the menopause. It is not only the reproductive organs proper which resign their functions at this period A great many glands which are in a manner which is still obscure related to these organs tend to become concomitantly deranged, and chief among them is the thyroid gland. The changes incidental to the menopause often begin much earlier than is commonly supposed to be the case In this country we are taught to expect them about fifty years of age In France the recognised age is forty But the age varies not only with race and climate, but also with the individual and it is far from unusual to find both spinsters and those married women who have begun childbearing at a comparatively early age *exhibiting very distinct* evidences of the approaching climacteric as early as thirty five years Of such evidences a great many

will be found to be very closely related to thyroid inadequacy and a very considerable improvement both subjective and objective, may usually be brought about by judicious thyroid medication True myxœdema in my experience more often owns the climacteric as its cause than any other factor or combination of factors

For reasons less obvious and in a manner less dramatic than the menopause the conditions surrounding the mere advance of years tend to produce inadequacy of the thyroid function. It is not that the thyroid gland declines more rapidly than the other internal secretory glands for all of them, even including the spleen, tend to diminish both in size and activity as the years advance It is that the thyroid gland is so important to the economy that any diminution in its activities reflects itself unmistakably in a great many directions So much is this the case that one foreign writer contends that if the activities of the thyroid could be maintained unimpaired the condition of old age could never arise It is not necessary to subscribe to such an extreme view in order to appreciate the value of suitable doses of thyroid extract in most of the troubles which are liable to beset the senile period There are very few of these troubles whose treatment by the recognised means is not rendered more rapidly successful by the addition of thyroid extract

I now pass to the consideration of some of the signs and symptoms from which we obtain confirma-

in this country that little diagnostic value is attached to them. They are nevertheless, both of them very suggestive and should always excite a suspicion either that the thyroid is not acting properly or that its functions have been gravely depressed in the past

Abnormalities of cutaneous pigmentation are exceedingly common in all disturbances of the thyroid whether such disturbances take the form of excess or perversion, as in Graves disease, or of inadequacy as manifested by myxœdema, rheumatoid arthritis rickets, or climacteric disorders. The abnormalities in pigmentation which accompany such disturbances are not as a rule very obtrusive, nor when present must they be regarded as pathognomonic but they afford valuable evidence in favour of suspicions otherwise aroused. Of these abnormalities leucodermia is by far the most common. Amongst the grosser forms of skin lesion that which is most frequently encountered in thyroid inadequacy affecting adults is certainly psoriasis but eczema is almost equally common Radcliffe Crocker[1] found thyroid extract exceedingly useful both in lupus vulgaris and ichthyosis. Urticaria, and transitory œdemas affecting the deeper structures are concomitants of thyroid insufficiency to which Levi and de Rothschild attach very considerable importance In cases of what we may call submyxœdema in adults there is usually a slight deposit of myxœdematous tissue under the skin,

[1] Diseases of the Skin, by Radcliffe Crocker 1903.

and this is more noticeable in certain parts of the body. In such cases it will be found that although the skin of the hand and forearm can be pinched up with ease, that which overlies the deltoid and the upper part of the trapezius cannot be so pinched up. In women the area immediately below the breasts often presents the same phenomenon. This condition has been called "panniculitis"—an unfortunate name, though less unfortunate perhaps than the French "cellulite."

The so-called obesity of the subthyroidic is not a true obesity. True obesity is a caricature of the normal outline; hypothyroidic obesity is a caricature of true obesity. The deposit of tissue favours certain regions. Not infrequently there is a decided hump over the seventh cervical vertebra, so pronounced as to give to a patient who is really upright the appearance of stooping. This hump occasionally attains to the size of a closed fist. Its consistence is hard, giving a sensation to the fingers which is quite unlike that of ordinary fatty tissue. The region over the deltoids is often covered with the same material, and that over the triceps almost invariably. In some cases the breasts themselves remain relatively small, though even then they are apt to be hard; but the region immediately below them is generally covered by rolls of tissue which may easily be taken for true fat. In both men and women the walls of the abdomen are furnished with the same material, but in women the most noticeable deposit takes place in the gluteal region.

Subthyroidic people like the fully myxœdematous though voluble about irrelevant matters, often seem curiously reticent about themselves. Their brains move slowly and they are very forgetful. It is therefore necessary to interrogate them very closely on questions which are purely subjective. That they are unduly sensitive to cold, that they have considerable difficulty in concentrating the attention that their memories are unreliable, especially in small matters that they are very somnolent especially at certain times of the day are all facts which must be elicited by cross-examination. Fatigue, muscular and mental is very characteristic of the condition. Although this element is very rarely absent from a case, the fact of its presence is never volunteered This is due as a rule to its having been quite confidently and often brutally attributed to nerves, fancies, vapours, or whatever the epithet of the moment may happen to have been and the patient has been urged to rouse herself and *take plenty of exercise* Needless to say this is very bad advice which not only causes a great deal of unnecessary suffering but militates very decidedly against any tendency to improvement Such patients demand physical and *mental repose* and it should on no account be denied them

I have said that in looking for a cause of under action in any gland it is well to remember the possibility of long continued toxæmic overaction

leading to exhaustion of the gland in question. Let me take an illustration from the pituitary and in so doing say at once that the chronic overaction may own causes other than toxæmia. There are a fair number of people going about who are so much taller than the normal as to give rise to a suggestion of giantism—men of over 6 feet 2 inches and women of 5 feet 10 inches. To careful examination a certain number of these people will reveal present evidences not of pituitary excess but of pituitary insufficiency. They have grown rapidly outgrown their strength as the saying is in response to an irritated pituitary. At a given moment the relative pituitary hyperactivity dies down to be followed by the relative insufficiency of exhaustion and although the balance may ultimately become redressed in some degree that person's pituitary is always lacking in vigour and without outside help will generally give rise to unpleasant symptoms. The preliminary excess is to be seen in the abnormal height, the spaced incisor teeth the large hands and the misshapen lower jaw which is either receding or underhung, according to the age at which the pituitary excess began to die down. The existing insufficiency is evidenced by intolerance of extremes of temperature by late oncoming irregular and painful menstruation by absence of half moons on the nails, and other irregularities of pigmentation especially little black moles, beauty spots dotted about the body. These people are usually mildly but definitely undersexed and tend

bear in mind is nowhere better exemplified than in the association which they all seem to have with the organs of generation—the gonads as they are conveniently called. Both in the male and in the female the gonads have been shown to have very intimate relationships with the thyroid, the pituitary the *suprarenals, the thymus and the pineal. Indeed* when one comes to consider each gland separately—its importance, its alliances and ramifications—one *is inclined to claim for* each in turn the title of leader of the orchestra which I have applied to the thyroid One is reminded of those detective stories in which the reader is led to believe that each character in turn is surely the real culprit In the play of the endocrines, I am as a rule firmly convinced that the thyroid is the star turn but whenever I contemplate the responsibilities of the gonads this conviction weakens. The ancients, who worshipped the phallus as the origin of life, were animated by a sound if savage instinct for latter-day science has taught us that the secretions of the testes come very near to fulfilling that proud and comprehensive claim The researches of Voronoff in testicular grafting,[1] which I have followed with the closest interest[2] prove to my mind quite conclusively that the internal secretion of the male gonad can accomplish miracles beside which those achieved by thyroid extract in myxœdema pale into insignificance It has been the

[1] *British Medical Journal*, October 21, 1922, p. 763.
[2] *Ibid* January 20 1923, p 130.

fate of most of us to meet with completely negative results from the administration of testicular and ovarian extracts by the mouth and some people have been moved by these failures to push the negation to the point of denying to the gonads in both sexes any really active internal secretion. Voronoff's researches have taught us this clinically important fact—that though quite inert when administered orally presumably from destruction of the hormones in the intestinal tract the internal secretion of the male gonads is extraordinarily active when applied in the form of grafts. These grafts must, however be applied scientifically to situations in the human body where experience has shown that they may be expected to survive. And when they do survive, their beneficial effects are exercised by no means exclusively nor even predominantly upon the sexual capacity but are displayed to an even greater extent in the muscular and mental and even arterial rejuvenescence of the patient. This chapter in endocrinology is only just opening, but when Voronoff's work has been freed from the salacious wrappings in which the lay press has so far succeeded in concealing its scientific value, the activities and potentialities of the testicular hormone will go far to justify the primitive adulation lavished by the ancients upon the phallic emblem. The testicular hormone effects rejuvenation and prolongs life. There is here no question of putting new wine into old bottles, because Voronoff's results strongly suggest that the bottles themselves—the

bloodvessels—partake in the general rejuvenation and he believes that the application of his methods will eventually result in prolonging the ordinary span of life to 100 or 120 years

THYROID MEDICATION—Success in the treatment of disease by thyroid extract depends in the first place upon the employment of a reliable preparation and in the second upon a very careful supervision of the dose In the matter of the former my own experience is not very extensive. I have tried but four preparations with all of which I have been satisfied One is Messrs Burroughs, Wellcome s tabloids, another is Messrs Oppenheimer s Palatinoids the third is the Elixir Colloid of Messrs Squire and Sons of Oxford Street and the fourth is a French preparation, the Thyratoxin of Byla and Co of Gentilly The disadvantage of the tabloids used to be that the minimum dose is ½ grain which as will appear later I now regard as a large dose This however is now remedied The Palatinoids are made in doses of ½ grain. The advantage of these two preparations is that they are portable and reliable The French preparation is a solid one, in the form of tablettes The makers claim that they have eliminated the lipoids and leucomaines which are present in all ordinary preparations in such quantities as to give rise to symptoms which are regarded as those of physiological intolerance It is certainly a fact that this preparation is very well borne by patients who seem unduly

sensitive to those in more common use One of the advantages of Messrs. Squire's Elixir is that the word thyroid does not appear on the prescription A very large number of patients or their friends have made unpleasant and even tragic acquaintance with the drug and are consequently apt to take fright at the mere name of it. It is therefore convenient to be able to prescribe it under a different name. Another advantage is that one may vary *the dose to any desired extent* *The strength of the* Elixir is 1½ grains to the fluid drachm so that 5 minims represent ⅛ grain, a dose with which I prefer to begin the treatment even of severe cases. As it is very frequently desirable to associate other drugs with the thyroid, it is a convenience to include them in one mixture. The Elixir has no incompatibles It is right to add that I have occasionally believed my results to be better with the solid preparations than with the liquid.

The dose of thyroid extract is quoted in most textbooks at 3 to 10 grains three times daily a dose so large that it would be ludicrous were it not so dangerous The proper dose is from one-tenth grain to 1 grain, three times daily With the exception of certain types of lunatics it is only the most robust among healthy people who can take larger doses with impunity unless these larger doses have been arrived at progressively from very small beginnings. There is one important fact which the prescriber of thyroid extract should keep ever

bloodvessels—partake in the general rejuvenation, and he believes that the application of his methods will eventually result in prolonging the ordinary span of life to 100 or 120 years.

THYROID MEDICATION.—Success in the treatment of disease by thyroid extract depends in the first place upon the employment of a reliable preparation and in the second upon a very careful supervision of the dose In the matter of the former my own experience is not very extensive I have tried but four preparations, with all of which I have been satisfied One is Messrs Burroughs, Wellcome's tabloids, another is Messrs Oppenheimer's Palatinoids the third is the Elixir Colloid of Messrs Squire and Sons of Oxford Street and the fourth is a French preparation the Thyratoxin of Byla and Co of Gentilly The disadvantage of the tabloids used to be that the minimum dose is ¼ grain, which as will appear later I now regard as a large dose. This however is now remedied The Palatinoids are made in doses of ⅛ grain. The *advantage of these two preparations is that they are* portable and reliable The French preparation is a solid one, in the form of tablettes The makers claim that they have eliminated the lipoids and leucomaines which are present in all ordinary preparations in such quantities as to give rise to symptoms which are regarded as those of physiological intolerance It is certainly a fact that this preparation is very well borne by patients who seem unduly

sensitive to those in more common use One of the advantages of Messrs. Squire's Elixir is that the word thyroid does not appear on the prescription. A very large number of patients or their friends have made unpleasant and even tragic acquaintance with the drug and are consequently apt to take fright at the mere name of it. It is therefore convenient to be able to prescribe it under a different name. Another advantage is that one may vary the dose to any desired extent The strength of the Elixir is 1¼ grains to the fluid drachm so that 5 minims represent ⅛ grain, a dose with which I prefer to begin the treatment, even of severe cases As it is very frequently desirable to associate other drugs with the thyroid, it is a convenience to include them in one mixture. The Elixir has no incompatibles It is right to add that I have occasionally believed my results to be better with the solid preparations than with the liquid.

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before him which is that the more a patient requires the drug, the smaller is the initial dose which he will tolerate. This is probably to be explained as follows The want of thyroid essence has given rise to the deposit of mucin in various parts. Under the influence of thyroid medication this mucin is liberated into the circulation with a view of its excretion. If *it is liberated too rapidly* as by large doses it *certainly* is there ensues such a surfeit in the blood that the excretory organs are unable to deal with it and urgent symptoms of intolerance quickly arise. Professor Murray warns his readers against the exhibition of large doses in advanced cases of myxœdema lest the degenerated myocardium fail under the strain and cause sudden death The warning is much needed. And not only in advanced cases for there are in reality very few cases of whatever degree of inadequacy which can tolerate without very grave disturbance an initial dose of more than ½ grain twice daily

It is commonly stated that the symptoms of excessive dosage are tachycardia palpitation, diarrhœa vomiting excitement and even maniacal symptoms These certainly do occur but only in the case of a dose so grossly excessive that its administration by accident would afford its only excuse If the drug be given with circumspection the fact that the limit has been reached will reveal itself quite unmistakably long before any of the above symptoms have time to develop A little

looseness of the bowels there may be but there ought to be nothing resembling real diarrhœa A certain degree of quickening of the pulse-rate is to be expected but if it amount to anything approaching heart-hurry the management of the case has been very unskilful To quicken mentality and promote alertness is one of the physiological effects of the drug but it argues ignorance or carelessness when those results are allowed to reach the stages of excitement and restlessness If it is intended to give thyroid extract over a period of several weeks it is necessary to make observations upon the temperature and pulse-rate If the drug is really required, the temperature is almost without exception subnormal especially in the evening, and the pulse-rate is as a rule slow When the temperature rises to normal the drug should be suspended at any rate for a time, and the pulse-rate whatever its initial figure, should never be allowed to go above 95 without calling a halt In the case of children other than cretins the body weight is a useful indication of the success of the treatment So long as the weight increases the drug may be continued as soon as the weight becomes stationary the drug should be suspended, and if the weight decreases the drug must be discontinued. Having ascertained by cautious increase from small beginnings the dose which best suits the patient my usual practice is to continue the dose for three weeks I then suspend it for a week and then resume it for three weeks and

so on If the pulse-rate is not slow at first or if there is any other factor in the case which makes me fear intolerance, I give the drug for a fortnight and suspend it for a fortnight. In the case of adult women, it is well to arrange so that the menstrual period should occur during an interval from the drug Given in the doses above recommended, and managed in this way there is only one sign of commencing intolerance for which one need be on the lookout this is coryza A sudden and profuse nasal catarrh sometimes surprises people who are taking thyroid extract, and unless the physician realizes that such a thing is possible he may attribute the catarrh to some ordinary cause and fail to discontinue the drug Another signal which has occurred in some of my cases is a painless enlargement of the glands at the angle of the jaw It has always disappeared on suspension of the drug A slight tenderness of the parotids one or both, sometimes occurs

In a few instances, at the commencement of thyroid medication patients have exhibited all the symptoms of acute pancreatitis—*i.e.*, a sudden attack of violent pain in the epigastrium with vomiting, constipation, and local tenderness which have in each case all passed off in a few hours The close antagonistic relationship between the activities of the thyroid gland and the pancreas is my reason for regarding the latter as the seat of pain. The sudden active stimulus of the thyroid extract upon a

pancreas which for a considerable period had been free from that stimulus would probably result in such a degree of pancreatic hyperactivity as to cause the symptoms The few patients in which these symptoms occurred were badly in need of the drug Short of producing violent symptoms of this kind it is by no means uncommon for patients taking thyroid extract in doses which appear otherwise to suit them to complain of feelings of discomfort after meals The symptoms are usually those of the acid type and they generally yield to alkalies and bismuth Not infrequently however the combination of HCl and pepsin seems to be more efficacious. Thyroid extract is said to be useful in the treatment of urticaria its action presumably being that of utilizing fully the calcium salts in the diet This may be so but it is to my mind quite certain that thyroid medication tends to provoke urticaria even in those who are not subject to this irritating complaint I have frequently been obliged to suspend the drug on this account with the invariable result that the urticaria has subsided.

Thyroid medication will occasionally but by no means always regulate the bowels The stools of those taking the drug regularly generally become very light in colour This may be due to an absence of bile pigment or to the presence of fats in excess. The latter cause is the usual one

When it is acting satisfactorily in an ordinary case of moderate degree thyroid medication increases

very largely the urinary output. The occasional presence of albumin in the urine need not excite alarm but the appearance of sugar should lead at once to suspension of the drug

If the best results are to be obtained from thyroid medication the ordinary mixed diet of the present day requires some slight modification. Carbohydrate foods and alcoholic drinks are recognised as depressors of thyroid activity I therefore direct those who suffer from thyroid insufficiency to be sparing in their use of them Common salt I also endeavour to banish from the dietary

CHAPTER VII

GENERAL HEALTH

To obtain clear ideas on the subject of general health it is necessary to realize two very obvious, but frequently overlooked, facts. The first is that, whatever his intellectual and moral development may be, man is essentially an animal, primarily adapted to certain conditions and surroundings and the other is that the needs of civilization have imposed upon him the necessity for or the temptation to certain modifications of these conditions and surroundings. The problem which presents itself is this How far and in what manner can the modifications be effected without impairing his animal powers—that is, his physiological or animal efficiency?

That man was originally a semi-nude animal, living in the open air who obtained his food by tilling the ground and hunting his game, may be taken as beyond controversy These were the conditions and surroundings to which he was originally adapted He has, in course of evolution, become a very much beclothed animal, who lives in houses, and obtains his food less by the sweat of his brow than by the

the material which is all but universally prescribed for underwear—namely flannel or wool—is precisely the one which has the least capacity for absorption. Flannel is a warm material, as it is called. No material is, of course, warm *per se*. All warmth is derived from the body itself, and one material is warmer than another in virtue of the fact that one is a worse conductor of heat than another Flannel is a non-conductor of heat, by reason of the air-spaces it contains, because air is a bad conductor, but flannel is not absorbent. Silk, linen, and cotton are in a different category These are all highly absorbent materials, but as their fibres contain no air-spaces they are not warm. It is, however, possible to manufacture them in such a way that they shall contain air-spaces, and thus become efficient non-conductors whereas it is quite impossible so to treat flannel as to render it absorbent.

The obvious inference is that flannel is not a suitable material for underwear and that silk, linen, and cotton can all be rendered very suitable by causing their fibres to contain the air-spaces on which the reputation of flannel rests. These materials are all now manufactured on these [illegible]
there is no longer any excuse for advi[illegible]
to utilise wool for un[illegible]
two substances, reality th[illegible]
as being pr[illegible] [illegible]ent, are
healthy animal [illegible]hen worn
they impress[illegible] and

deficient evaporation diminished metabolism and great disinclination to mental and bodily exertion.[1]

And not only should clothing be of a suitable material but it should be constructed so as to give the limbs free play and allow the circulation to proceed without let or hindrance Tight vests and clinging drawers are much too common, especially with the young It is not very long since the profession had good reason to deplore the tight corsets affected by women Fashion has fortunately decreed that these shall no longer be worn but *en revanche* she has imposed upon the smart women of this generation a burden almost as deleterious The tight, high collars stiffened with whalebone which used until recently to be *de rigueur* are scarcely less objectionable than the stocks worn by our ancestors or the highly starched double dog-collar beloved of the contemporary city clerk

It should be remembered that the neck is an isthmus containing very important organs. To say nothing of the larynx, the thyroid and lymphatic glands, it contains large bloodvessels for the supply of the brain, and is traversed by many important nerve-trunks. Very little consideration will show that constriction of such a tract must seriously impede the free movement upon which so much depends. The

[1] For a detailed discussion of this question, see Three Lectures on Personal Hygiene, *Clinical Journal*, July 6, 13, and August 10, 1904; Some Aspects of Obesity *Practitioner* May 1904; and Rheumatics in Relation to Climate *Birmingham Medical Review* May 1905.

muscles waste, and the underlying organs become exposed to a pressure which Nature never intended them to encounter, with the result that headaches, giddiness, and the various *symptoms of thyroid* embarrassment quickly ensue. The neck should be as free as possible, and under no circumstances should tight or high collars be tolerated.[1]

General physiological efficiency is dependent more upon an ADEQUATE SUPPLY OF OXYGEN to the tissues than upon anything else. No one is capable of his best work unless he is able to obtain air of normal purity and any habitual falling short of the normal lessens the general powers of resistance, and leads to disease. The normal standard of purity is given by authorities as 21 per cent of oxygen and 04 per cent. of CO_2, and they go on to say that a rise of CO_2 to ·08 per cent. is distinctly harmful. The normal standard is obtained from the examination of air in the country on mountains at sea, and in open spaces of towns and it is found to be remarkably uniform in all portions of the globe inhabited and uninhabited. The air in houses falls short of this standard the proportion of CO_2 very commonly reaching ·05 per cent. and where a large number of people are gathered together, as in churches, theatres, concert-rooms, and the like it not infrequently reaches ·08 per cent., or indeed, 1 per cent. either of which percentages represents gross impurity The degree of impurity of

[1] See Dangers in Neck Wear by Dr W G Walford (H. K. Lewis).

been laid upon the importance of fresh air in the brilliant results obtained thereby in the treatment of phthisis, medical men, as a rule are far too tolerant in their patients, and in the public generally of impure and even grossly vitiated atmospheres This tolerance is due in a large measure to the persistence of what may be called the chill theory—the theory that is, by which any morbid condition whose etiology is obscure is attributed to the action of cold or chill.

It is not very long since phthisis, pneumonia, and influenza were confidently stated to be due to chill, and there are still some people who believe in pleurisy *a frigore*. In times still more remote, almost all diseases were deemed the result of chill. It is not surprising, therefore, that in the lay mind the word should suggest some obscure yet serious menace, nor that every precaution should be taken to guard against so deadly and ubiquitous an enemy Among the causes of chill, draughts are always given the first place To sit in a draught is regarded by many people who are otherwise sane and reasonable as the most unwise and dangerous proceeding not because it is unpleasant, but because it is directly calculated to lead to serious disease.

There is not only no justification for this view, but it is diametrically opposed to what we now know to be the truth. The majority of diseases are due to microbic invasion microbes of all sorts abound in polluted atmosphere, and there is no means of preventing an atmosphere from becoming polluted

except by the admission of fresh air The admission of fresh air necessarily produces a draught, so that it is quite obvious that we have to choose between a draught, which is salutary and stagnation of the atmosphere which is deadly

If the open air treatment of phthisis has established anything, it has proved beyond all cavil that currents of air are not injurious. The patients at sanatoria live, as I have heard it expressed, in a gale of wind, and it is a fact that when they return from those institutions people are particularly intolerant of anything in the nature of stuffiness These patients we must remember are what the French call *poitrinaires*—lung sufferers—and are therefore drawn from amongst those to whom, according to the chill theory draughts are most deadly

The success of the open-air system is in reality the *reductio ad absurdum* of the chill theory Extreme cases are taken, not of the disease of course but of those who have delicate and debilitated air passages, and who are therefore susceptible above all others to the supposed baneful effects of draughts. They are taken generally from the heart of a draught-eschewing household, and are suddenly even in the depths of winter deliberately and of malice aforethought subjected to a system in which exposure to draughts is the leading and essential feature. And what is the result? If there were the slightest basis of truth in the chill theory they would die like flies but, instead of doing so, they not only

continue to live but they increase in vigour and in weight, and their disease becomes arrested. No more convincing proof could possibly be afforded of the baselessness of this ignorant and pernicious fallacy which is gnawing at the vitals of the community

The moral of this is simple enough. We cannot all live in open air sanatoria, even if we would, but we can all put in practice the principles of which these places have established the correctness and the value. It is the duty of the profession to instruct the public in the prophylactic aspect of the matter and to educate people into realising that tuberculosis is only one even though it be the most important one of many evils which inevitably follow in the wake of polluted air, and that a pure clean atmosphere is as essential to the maintenance of healthy lungs as pure, clean water is to the preservation of healthy intestines. It is unnecessary to enter into detail on this subject. People can only be weaned from the chill theory by having it pointed out to them that those who practise it are unhealthy and by being made to experience the superiority of the effects of fresh air however productive of draughts its ingress may be.

Without adequate ventilation there can be no such thing as physiological efficiency and in the present method of house construction the only means to adequate ventilation is the open window And the window should be kept open day and night, not

occasionally only nor a little bit at the top (the virtues of which little bit being sadly marred by drawn blinds, well secured shutters and heavily draped curtains) but sufficiently open to provide for that really effective circulation of the air upon which healthy animal existence necessarily depends.

The importance of SUNSHINE has long been recognised by hygienists, and recent investigations have strengthened the general faith in its efficacy When the skin is exposed to the sun s rays, the nerve endings are stimulated and the afferent nerves convey the stimuli to certain centres, which in turn distribute the stimuli to appropriate organs. That the stimuli thus applied are very powerful is easily recognised by the burning and freckling by which fair skins respond, and the tanning of dark skins The capacity to produce the necessary protective pigment should be gauged in the case of children, and parents should be warned against the too sudden exposure which so often takes place in summer at the seaside Dr Rollier of Leysin has made a very careful study of the effects of heliotherapy not only in the tuberculous, but in patients debilitated from any cause, and he insists that exposure should be very gradual even in fairly robust patients. If it is not, reactions are very liable to occur such as rises of temperature headache loss of appetite diarrhœa and other gastro-intestinal and nervous disturbances. In these islands the onset of summer is often very sudden and children and young adults are encouraged

to sun themselves at the seaside and on the river, in what may be called an intensive manner This frequently gives rise to unpleasant consequences unnecessary anxieties, and diagnostic doubts, and thereby to the spoiling of a holiday which a little care would have rendered altogether beneficial It is difficult at present to say which of the organs are over stimulated by such undue exposure but the probability is that the nervous systems and the endocrine glands are made to bear the brunt of the attack.

A suitable DIET is necessarily the pivot round which a healthy life revolves. It is not only that a suitable diet restores our waste and reinforces our defences it is that an unsuitable diet exhausts our energies Material which is difficult of digestion and assimilation makes large and illegitimate demands upon the resources of the economy with the result that energy which is required elsewhere is uselessly expended in the intestinal tract. It is a commonplace saying that we all eat too much but a recitation of the credo does not seem to bring any improvement in the practice. There is a very old and ugly saying that man digs his grave with his teeth a very general recognition of the truth of which has impelled medical men for over one hundred years to dabble in *questions of diet*. *Until recently* the researches were directed to the discovery of substances in the dietary of civilized man which were responsible for the obviously detrimental effects upon his health

Haig indicted uric acid Hare accused carbohydrates other persons have arraigned other substances. The discovery of the vitamines has completely changed all this. It has shown that the real villain in the piece was not a stealthy intruder but an ambiguous absentee. Food is now seen to be harmful not from what it embodies but from what it lacks and research workers are diligently dissecting the absentee so as to show us his component parts. I have no word to say against these researches, still less against the researchers Nevertheless I claim that this work so far as we are at present concerned is purely academic and that attempts to utilize it in practice are liable to produce a false perspective. Our knowledge of these elusive vitamines is still very meagre. For a long time we admitted three only as generally necessary to salvation recently a fourth has been added and it is as certain as anything can be that there are more to come. For the present then we must treat them as a whole, just as we should try and treat endocrines as a whole their various members are probably just as interdependent as the various ductless glands. To individualize them as is now being done, is academically interesting no doubt but it is dangerous. It is at least possible—it is even very probable—that they only attain to their maximum effect in the presence of one another that there is in fact, a vitamine balance which is just as important to the economy as an endocrine balance. We must, there-

fore so frame our *dietaries* as to secure the inclusion not only of those vitamines which have already been labelled but also of those which still await isolation In order to do this we must go back to first principles, and ask ourselves what these vitamines really are. The answer is that vitamines are substances which are essential to growth development, and the maintenance of health which exist abundantly in raw foods and are relatively absent from cooked foods.

It has been the unfortunate fashion among some of the research workers to try and estimate the minimum amount of each known vitamine which will satisfy *the demands of the economy* *Now what we want* to arrive at is not the minimum but the optimum and I think the optimum in this case will ultimately be found very nearly to coincide with the maximum We have to remember that man is the only animal which is unable intuitively to select suitable food It is obvious that he must at one time have possessed that power and equally obvious that he lost it through the cooking stove. Whether or not Charles Lamb s *jeu d'esprit* concerning the origin of roast pork represents the real beginnings of cookery I cannot say In any case, it is certain that cookery is an art which gaining on us gradually through the ages, has long since reached the point of overwhelming us. *It is no longer our servant*—it is now our tyrannical master We think and speak and act as though all foods ought to be must be and shall be cooked Cookery is an axiom a condition pre-

cedent, a phylactory It is impious to discuss it. It has permeated every class in the community not only as a practice but as an article of faith and has unfortunately succeeded in dragging the medical profession at the tail of its triumphal car Now if we are to profit by the advent of the vitamines, we must modify this attitude rearrange our outlook and abjure this molten image. Cooked foods must be placed in the same category with alcoholic drinks—that is, they must be classed as luxuries moderate indulgence in which is not only permissible but often even praiseworthy Our real foods—that is the foods which are proper to us—are those with which Nature has provided us—namely raw foods, dairy produce and uncooked fruits and uncooked vegetables These should constitute the foundations of our dietetic edifice, our altar on which the individual may offer up any burnt sacrifice of sheep and oxen birds and little fishes which fashion or taste may direct Up to the present it has been our practice and for many of us it will remain so until we die sternly to forbid our patients to eat raw foods in any form with the result that we are just as far from the successful treatment of certain general or diathetic diseases—such as gout, rheumatism and other forms of arthritis—as we have ever been. These maladies rank high amongst the so-called deficiency diseases—diseases that is, which are directly due to an inadequate supply of vitamines to the economy Nor do they by any means rank alone. I have satisfied

gums themselves I cannot say but I should think it highly probable. They are certainly very powerful in preventing the deposit of tartar I must not however be understood to suggest that established genuine pyorrhœa requires no treatment, for I am firmly of conviction that it is a condition which urgently demands close and serious attention. When the dental surgeon has done his work in the matter of stopping cavities and scaling the teeth the vaccine recently introduced by the Institut Nationale de Vaccinothérapie of Paris should be used. Its efficacy in the majority of cases approaches the miraculous.[1]

It is to be remembered that cooked foods are very stimulating especially meat foods. They invite to excess The appetite which comes with eating comes with the eating of cooked foods only Uncooked foods—as dairy produce, salads fruits and nuts—are not stimulating Try as you may you cannot over eat yourself on such simple fare Moreover the sin of surfeit is usually the result not of greed, but of need. The need is that of the economy which, in its determination to obtain a sufficiency of those vitaminous principles which the cook has reduced to a minimum ingests a whole hefty haystack in order to be sure of the necessary needle.

The gospel of a simple and natural diet is unlikely to make any headway with the public until members of the profession consent to do the work of propagandists.

[1] The agents in this country are Messrs. Thomas Christy and Co., 4, Old Swan Lane, E.C.

Most people consider it their physiological duty to eat as much as they can children are systematically overfed invalids and convalescents are coaxed and beguiled into overcoming the distaste for food by which the exhausted economy pathetically prays for peace and any reasoning to the contrary is derided as dangerous faddism. The proposition that we live by what we digest and not by what we place into our astonished and often rebellious stomachs, though generally granted is seldom acted upon. The proposition itself however conveys but very partial wisdom for it is necessary to realize that many people digest more than the economy requires, and that the mere process of digesting superfluous material is very costly in the matter of physiological energy You can exhaust yourself via your digestive apparatus, even more easily than you can tire your self via your skeletal muscles. The persistent over feeding which is to-day the practice of the majority is the cause of the chronic poisoning which is re sponsible for man s early decline and premature passing into nothingness. If people would but obey Nature s somewhat stern decrees in the matter of diet, man would surely retain his mental and physical efficiency for at least fifty years beyond the psalmist s exiguous estimate. A harsh dietetic régime is not a popular prescription and when it represents a complete change from former habits, it is too often found to disagree physically as well as mentally The gastro-intestinal system having

accustomed itself to stimulating foods, is liable to go on strike when the stimulus is withdrawn with the result that simple fare gives rise to *dyspepsia* and other evidences of an insufficiently active digestive tract. It is my custom in these circumstances to advise a gradual change from ordinary cooked food to the vitaminous diet of which modern science approves. In this country, where people are in the habit of consuming four fat meals a day—not infrequently reinforced with beef tea at eleven and Benger at bedtime—it is best to begin with an attack *upon breakfast and afternoon tea. The latter should* be abolished lock stock, and barrel. In this matter there ought to be no compromise whatever The interval between the midday meal and the evening is badly required by the stomach for rest and recuperation from the labours of luncheon and these should under no circumstances be denied to it. Women of the affluent classes cling *tenaciously to* this meal, partly because it is in itself vicious and largely because of the opportunities for gossip which it affords and they will often surreptitiously adhere to it long after they have attained to righteousness in the matter of the others The ordinary Briton has so fixed a faith in the moral efficacy of a full break *fast* that *it is often* very difficult to persuade him to modify it down to something approaching the Continental level of a cup of tea or coffee with a roll and butter and some fresh fruit. The morning is the time of excretion, and should be dedicated unto

servedly to that all-essential beneficent process The meal about which I have found people to be most amenable to reason is luncheon. Those who work with their brains are often conscious of lassitude and discomfort after luncheon from which they are glad to be shown any reasonable road to relief It seldom occurs to them to alter the dietetic habits in which they have been brought up and it comes to them as a revelation—frequently a very welcome one—that a beefsteak with vegetables and a rice-pudding can be replaced by toast butter cheese and fresh fruit, not only without giving rise to a profound debility leading straight to the cemetery but with the strange advantages of unimpaired mental alertness and increased bodily vigour

With the evening meal it is not wise seriously to interfere at first. I do my best to discourage people from eating both fish and meat, and try and induce them to substitute fresh fruit salads for boiled puddings. By degrees it is generally possible to replace the cooked vegetables by fresh salads and to encourage simplicity in other directions. I find it convenient to point out that it is what is eaten habitually that matters not what is eaten occasionally so that the victim may look forward to an occasional dinner with his friends without appearing to be a food faddist or a crank. Owing to the general improvement in health which follows in the wake of the new diet, he soon learns to prefer it to any other and remembers with horror the stuffy banquets which

he had formerly consumed with pious unction. Women are more easily persuaded into these paths than men not only because they take their appearance more seriously are more attentive to detail and more persevering than men but because the man always has to face the determined *opposition of his* wife to any change in diet, especially to any change which she regards as likely to enfeeble him All women have an instinctive tendency to feed the brute, so that it is well for a medical man to convince the wife before expecting the husband to toe the dietetic line.

Of recent years **FASTS** have been reintroduced into practice. Beginning with *Allen s* starvation treatment of diabetes the success of which has been one of the outstanding features of recent therapeutics it came to be gradually and tentatively employed in other conditions of faulty metabolism and it may now be said to have established itself firmly as a reliable curative method. The fasts imposed by various religious orders were almost certainly hygienic in their original purpose, so that the *recognition of their* value as a prophylactic measure carries us back to the Dark Ages That value resides in alimentary rest. The alimentary tract is usually sorely overburdened with unnecessary work, and the best way of redressing the balance is by giving it that complete repose which fasting alone can effect. To those who have never subjected themselves to this simple discipline the *prospect of a day or more without food* is

fearsome in the extreme. The reality however is not very unpleasant. If one starts out for a fast of three days—the diabetic term—the first day is certainly sad. The second day is much less sad and the third is not sad at all. Nor need the first day be really sad if a very simple precaution is observed—that, namely of taking a purgative the night before beginning the fast. The reason for this is that when there is no absorption taking place from the stomach material in the lower reaches of the canal is reabsorbed into the blood and the toxins contained in this material contribute to the sadness. When the tract is empty or nearly so there are no toxins to reabsorb and the relief is complete. In conditions other than diabetes there is no real necessity to prolong the fast beyond one or two days, and once a patient has experienced the benefit of going without food he will generally do it of his own accord as soon as he feels out of sorts.

A two days fast is an excellent preparation for the change from ordinary food to a vitaminous diet. The details of that diet are simplicity itself. They consist in adhesion to what the Americans call the principle of unfired food. When it is realized that this seemingly severe restriction includes all dairy produce and all fruits and salads, with the necessary addition of bread the area of selection appears wide enough for those who are content not to overeat themselves. Whether alcoholic drinks do or do not contain vitamines of any sort is one which has not been definitely settled. The probability is that beers and wines do

contain them, and that spirits do not. It is therefore my custom to forbid the latter while turning a blind eye to the former. It is certainly much easier to persuade people to adopt a rational scheme of feeding if you do not cut off all their little luxuries at one blow and though I never directly advise alcoholic drinks, I do not seek to stop them in the case of those who are accustomed to take them in reasonable quantities. The same attitude may safely be adopted in the matter of tea and coffee. These are both agreeable stimulants which in a general way may be regarded as harmless.

The alternative of increasing the output by stimulating the oxygenating processes brings us to the question of **EXERCISE**. Here, again, having regard to the enormous personal differences which exist, it is quite impossible to lay down any hard and fast rule. This however may be said with confidence—that he who eats much, must exercise much, and the man for whom much exercise is impossible must meet the situation by consuming little. It is a common experience that brain work in the study is, with some people at any rate an even greater provoker of appetite than muscular exertion in the fields. The explanation of this fact is too involved to enter upon here, but it may be asserted that the hunger begotten of study should not be appeased in the same manner as that which is begotten of muscular exertion. For the latter, a plentiful supply of nitrogenous foods, especially of meat foods, is sometimes considered

appropriate. Although very decided doubts are now expressed upon this point, it seems generally to be agreed that such foods when taken in abundance by a sedentary worker lead inevitably to impaired health. The man, then, who has ample opportunity for efficient oxidation may be left to work out his own dietetic salvation but he who is deprived of such opportunity should have it explained to him that, be his study begotten appetite never so vocal, he must satisfy it otherwise than by meat foods and alcoholic drinks.

Of exercise in general it may be said that the necessary amount depends upon individual requirements, a powerful factor in determining which is the amount of food consumed. It also depends to a great extent upon individual opportunity and the amount to be recommended in each case can be arrived at only after due consideration of these points. The best kind of exercise is also a matter which must vary considerably in each case though riding and golf are, as a rule appropriate to both sexes and all ages. The objection, however which is to be urged against these and most other exercises, with the exception of rowing is that they contribute nothing to the development of the abdominal muscles The importance of keeping these muscles in good condition must be evident to those who remember that practically they constitute the anterior abdominal wall and that if they are allowed to become lax they fail to give adequate support to the internal organs.

There was at one time a good deal of talk about the responsibility of the 'abdominal pool,' or 'splanchnic lake' for deficient metabolism, and practitioners at health resorts especially in Germany, are still in the habit of attributing a good many of the morbid conditions which they are called upon to treat to 'abdominal venosity' These are in reality all synonyms for the same thing—namely the state of matters which is brought about by lax and undeveloped abdominal muscles.

To keep these muscles firm and in good order their regular use is essential and as the ordinary forms of exercise help but little in this direction it is evident that we must resort to an exercise *ad hoc* Various forms of such an exercise have been recommended, but the one which seems to be the best, in that it is not difficult, violent, or time-consuming is the following Wearing as little clothing as the circumstances permit, and with the windows wide open, the patient lies on his back on the floor with his feet under the opened lowest drawer of a chest of drawers, or anything else which will keep his feet from rising from the ground. With his arms fully extended above his head and touching the floor in their whole length he proceeds to pull himself into the sitting posture by means of his abdominal muscles, keeping the knees unbent. Care must be taken not to advance the arms beyond the line of the trunk and to perform the movement deliberately This will be found a very trying

discipline to those who are unaccustomed to use their abdominal muscles indeed, it is to many quite impossible so that it is wise to begin with a modification which consists in allowing the arms to be crossed on the chest while the rectus muscles pull the trunk forward.

This exercise should be done two or three times each morning to begin with, and when it can be done seven times without undue effort, the arms should be placed above the head as first described. With the arms thus placed the number of times must again be reduced and then gradually increased as before Another exercise which may immediately follow on the foregoing is performed as follows The feet are released from the chest of drawers, and still lying flat on his back, the patient raises the fully extended legs until they are at a right angle to his trunk. While this is going on, the hands are engaged in pinching up the skin and otherwise massaging the abdomen. These procedures may sound very formidable, but they are in reality not so If they are done regularly without hurry or strain, they take very little time and can do no harm while their effect in keeping the figure from becoming aldermanic is very marked. This consideration appeals to most people—more especially to women—and if a greater number of the fair sex undertook these exercises there would be fewer cases of floating kidney and other abdominal and pelvic troubles than now unfortunately exist.

Of other exercises which are adapted to ordinarily healthy people who have insufficient opportunities for spending much time in the open air, skipping holds a high place. Although usually *regarded as* suitable only to children it is in reality a very excellent discipline for middle-aged and even elderly people, when undertaken with due regard to the necessities of each case It exercises every part of the body including the abdominal muscles and subjects the internal organs to a species of massage which is very beneficial. There are several systems of exercises, Swedish, Danish and others, now in vogue, the majority of which as entailing no violent exertion and as tending to keep most of the muscles in good working order may be confidently recom mended to healthy persons. All these exercises should, if possible be performed daily as a matter of routine in the morning before the bath, and preferably in a room the window of which is wide open.

The question of the temperature of the daily bath is one which is often referred to the medical man. I have already said that as a general rule it should be cold — that is, of a temperature between 40 and 60° F This however, refers only to healthy people under middle age, in whom a reactionary glow is easily obtained by the aid of a rough towel. To *such people* a *cold* bath is very invigorating; it promotes metabolism and effectually exercises the contractile power of the skin. If however it should

not be followed by a reactionary glow or if it should cause headache or loss of appetite it should be discontinued. People who from any cause have a blood pressure which is definitely above the normal always complain of discomfort after a cold bath. The contraction of the peripheral arterioles increases the arterial tension, and if the baths are persisted in accidents are very liable to happen. I have more than once been led to the discovery of an otherwise unsuspected vascular disorder by complaints of head ache, giddiness, and the like which have been positively referred to the cold morning tub

Where for any sufficient reason it is decided that the daily bath should not be taken quite cold it is necessary to decide at what temperature it should be taken. A tepid bath is one which, though definitely below the normal temperature is nevertheless, not so cold as to cause much contraction of the cutaneous vessels—that is from 85 to 95 F A warm bath is one which is about the same temperature as the surface of the body and causes neither contraction nor dilatation of the cutaneous vessels—that is from 90° to 98 F A hot bath is one which is substantially higher than the normal body temperature, and tends to cause dilatation of the cutaneous vessels—that is from 98 to 105° F In connection with the hot bath it is to be remembered that its effect varies not only with its temperature but with its duration, and, further that there are a great number of personal idiosyncrasies in the degrees of heat which can be

tolerated Women as a rule, can take baths at much higher temperatures than men.

Very hot water causes an initial contraction of the cutaneous vessels, but if the bath be prolonged, this effect gives way to one of dilatation, and the ultimate result is one of general relaxation. If, therefore the hot bath is substituted for the cold morning tub it should be made clear that the exposure to the hot water though it should not be so prolonged as to produce a general relaxation, should nevertheless be prolonged enough to enable the cutaneous vessels to recover from their initial contraction. If a daily hot bath of long duration is desired it should be taken, not in the morning but at night, when the day's work is over and relaxation is normal and physiological.

It is said by some physicians, chiefly on the Continent, that a daily bath is not only unnecessary but actually injurious on account of the fact that the natural oil of the skin is thereby removed. Such a view has nothing whatever to support it. The natural oil of the skin is an excretion and it should be removed at least once daily with the aid of soap and a due amount of friction. For those who are unable to take a cold morning tub, the warm bath of not more than 100° F is the most generally suitable for these necessary daily ablutions. The duration of such a bath should not exceed five minutes.

CHAPTER VIII

OLD AGE

When man arrives at maturity he attains to a physical state which he ought to be able to maintain for a very much longer period than is now considered likely Physiological maturity is not a function of time and senility is not a question of years Georgias of Leontini, at the age of one hundred and seven years —still active diligent, and efficient—was asked why he consented to go on living He replied I have no fault to find with old age. Cicero s comment on this was That was a noble answer and worthy of a scholar for fools impute their own frailties and guilt to old age. Nevertheless it must be admitted that length of days without physical and mental efficiency is the reverse of desirable There is no family so deserving of commiseration as that which includes a member who is a senile and peevish autocrat, or worse still one who is a senile and physically healthy imbecile. Old age with mind and body unimpaired is admirable it carries with it lovable qualities of heart and brain which are seldom otherwise encountered but old age as it is too often seen is unlovely and unlovable In the vast majority of cases it is true as Cicero puts it, that *senectus ipsa morbus est.* When efficiency

becomes seriously impaired continued existence is an incurable disease by no one in no wise to be coveted.

Some of those who recall Solomon s admonition Remember now thy Creator in the days of thy youth while the evil days come not nor the years draw nigh when thou shalt say I have no pleasure in them seem to imagine that by taking thought they may indefinitely postpone the evil days and their method of taking thought not infrequently leads them into very fantastic precautions. Forgetful or more probably ignorant of Plato s profound saying that attention to health is the greatest hindrance to life they become converts to every new hygienic gospel and sit willingly at the feet of any prophet dietetic or psychic who will peddle them an earthly Paradise from an ass s pannier

With the wit and truth which scintillate in so many of their sayings, the French have it that Pour vivre longtemps il faut une bonne digestion et un mauvais cœur Matthew Arnold in a characteristically grim couplet remarks that the only thing which old age has in common with youth is discontent In another poem the same staid cynic of the seventies says that when old we feel but half, and feebly what we feel deep in our hidden heart festers the dull remembrance of a change but no emotion none The arch-cynic Swift goes gloatingly into greater detail He portrays for us the Struldbrugs whom Gulliver found on the island of Luggnagg These creatures never died. Gulliver

at first envied them but he ended by hating them They were not only opinionative he says peevish covetous morose vain and talkative but incapable of friendship and dead to all natural affections. Envy and impotent desires were their prevailing passions

In spite of Cicero s saying old age is not of course physiologically a disease any more than infancy is a disease It is a stage in the evolution of the indi vidual It may come early or late but it comes Some people—*e.g* the victims of pogeria—become senile at puberty others have already run their course at forty five some retain their manhood until the sixties but it is very rare to find anyone over seventy who does not bear quite unmistakable marks of physical decline

As infancy is the time of tumultuous, erratic disorderly reaction, and adult life the period of deliberate generalized orderly reaction so is old age the period of slow blunted, and apparently dissociated reaction. There is a story of Rudyard Kipling's in which the various parts of a ship on its trial trip keep crying out to one another but by the end of the journey there was no further conversation as there were no longer any parts The ship had found herself and become homogeneous It is thus with the human body In infancy one organ which is *hurt cries loudly to the others all of which join lustily* in the discordant chorus As the years advance the response becomes less and less until in old age each organ keeps its grievances to itself This is very

puzzling to those whose practice has been mainly among children and adults for the general reaction and concomitant symptoms upon which they are accustomed to rely for confirmatory evidence are generally wanting The pulse-temperature ratio for example is very different to that which is customary in febrile states in adult life for the pulse-rate remains low though the temperature be high It is the same with the pulse-respiration ratio for in old age dyspnœa is easily provoked by slight causes whereas heart-hurry seldom occurs As each organ is thus to a large extent autonomous there is no massing of the general powers of resistance of the whole organism with the result that acute affections in old age show a great tendency to become chronic

In dealing with elderly people this cardinal fact of their blunted reaction and lengthened period of recoil from stimuli must never be lost sight of It is the key to much which would otherwise seem paradoxical it explains the otherwise inexplicable Pain for example is never so acute in the aged as it is in the adult or the young Even the pains of hepatic or nephritic colic which in the adult are amongst the most agonizing which he can endure are so much reduced in old age as to become almost imperceptible and the older the patient the less is the pain The question of temperature affords another example When the thermometer is used in the ordinary way by being placed in the mouth or the axilla, it may fail to register any febrile move-

ment although the real temperature as taken patiently in the rectum may be as high as 101 F The reaction to mental and moral stimuli is notoriously enfeebled in old people Even when they do not exhibit the vices of Struldbrugs they tend to become self-centred and heedless of matters which do not concern their physical condition or they tend to lose the control of the higher centres and display unreasoning and impulsive irritability The expression second childhood is by no means a pointless gibe

The general hygiene of old age differs in many material respects from that which is applicable even to late adult life The aged are, for example, peculiarly liable to external parasites both animal and vegetable. Pediculi of all kinds seem to have an instinctive knowledge of the easy prey which old people present and this coupled with the relative insensitiveness to pain in the victim is liable to give rise to results against which special precautions are necessary Among vegetable parasites *Microsporon furfur* is extremely common. It is not infrequently mistaken for the pigmentation which is so common in the senile skin possibly as the result of suprarenal insufficiency

The maladies which afflict the decadent period of life are none of them peculiar to that period The same diseases and affections are met with in the adult the adolescent and even in the child. It is nevertheless true that certain diseases are more common in advancing years than they are in the

earlier periods, and that the diagnosis of these diseases presents difficulties and their treatment demands modifications, due solely to the age of the patient Among the best illustrations of these peculiarities are those connected with the gastro-intestinal tract The dyspepsias of old people very seldom conform to the types with which all are familiar in the adult and the child. Not only has the physician to bear in mind the spectre of carcinoma, but he has to remind himself that gastric and duodenal ulcers are by no means uncommon and that they give rise to little or no pain and very few general symptoms. Chronic constipation is so frequent in old age as to amount almost to a normal accompaniment of senescence and even when very obstinate it sometimes seems to do no harm whatever Elderly patients have often been known to protest that they feel much better when they are constipated. In the presence of gastro-intestinal troubles in the aged the possible responsibility of a hernia should never be lost sight of Herniæ are almost as common in old people as constipation itself Cardio-vascular affections bear a character of their own and attain to a special significance with advancing years. These in themselves would constitute a long chapter Deviations from the normal in the domain of the central nervous system are in many respects very dissimilar from those which occur in the adult To the rule of relative analgesia which has already been referred to as characteristic of senectitude there are two notable exceptions.

ne is that true neuritis in old age is liable to be very
otracted and severe as for example the pain which
llows herpes zoster The other is that pruritus
oth general and local is certainly more intense
more obstinate and more wearing in the old than it
is in the young

There has been much discussion concerning the
causes which determine that one man should be
senile at fifty and another similarly circumstanced
should still be young at seventy It is said to be a
question of their respective constitutions. That i
doubtless true but it is necessary that we shoul
understand what we mean by a constitution. Th
constitution of any given person depends upon th
accuracy of his metabolic changes By accuracy
mean the proper co-ordination of his intake
assimilation and his output. If at the outset h
well endowed with co-ordinative power if as
French say he is originally well equilibriumed,
his constitution is good. If however there
piece which does not quite fit the dovetail wh
it be too large or too small a thought too narr
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becomes painfully apparent in times of str
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Of these three, intake assimilation and
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this element wanes and it is the output which becomes paramount Adequate anabolism in infancy and childhood, energetic katabolism in adult life and advancing years—these are the bulwarks of the constitution.

Time was and that not so very long ago when *our knowledge of matters* metabolic was very rudimentary Tissue change was regarded partly as a nervous phenomenon, but mainly as a dietetic drama, in which a harmless enough creature called uric acid very successfully posed as the villain. To-day we know more but there is much knowledge still to seek. We know that metabolism is under the direct control of the internal secretory glands We know that these glands preside over growth and development in infancy and childhood, that they are essential to mental, physical and reproductive efficiency in adult life and that they are responsible for the maintenance of katabolic balance in the period or decline It is therefore no exaggeration to define the constitution of an individual as the resultant of his internal secretions

Lorand has sustained at some length and with considerable ability the thesis originally put forward by Leopold Lovi to the effect that the causes which give rise to the phenomena of senescence are due to the decline in the activities of the thyroid gland. It is not of course suggested that old age itself is due to a failure of the thyroid, but it is contended that many of the disagreeable and disabling concomitants of senescence can be directly traced to this cause

Leopold Levi has compared some of these concomitants with the symptoms of myxœdema and points out that they have much in common. The asthenic state of the skin and its appendages the subnormal temperature both subjective and objective the muscular weakness the failure of memory and the difficulty of mental concentration the affections of the gums and the disorganization of the teeth the rheumatic pains the constipation, and the tendency to vascular degeneration, are all of them salient features both of myxœdema and senility and present a series of similarities which can scarcely be dismissed as fortuitous This is certainly an unduly restricted view of the matter for it is quite certain that in common with the thyroid, all the endocrine glands notably the gonads, the suprarenals the pituitary and the pancreas, undergo anatomical changes which seriously impair their functional activities. The phenomena of old age are therefore due to a general lowering of endocrinic activity and not to the failure of one gland only important though that one gland admittedly is. There can for example be no doubt that the testicular decline is an important factor in the production of some of these phenomena nor that the suprarenal and chromaffine failure accounts for others and it is more than probable that some will ultimately be traceable to the pituitary and others to the pancreas The practical value of this view of the question is to be found in the light which it throws not so much on old age itself as on its premature onset and on many of its least bearable accom-

paniments It holds a promise that the study of the ductless glands in health and disease will enable us to afford a measure of relief in the treatment of senile conditions which has hitherto been impossible.

The personal hygiene proper to the senescent does not differ very materially from that which should be observed in the middle years. It might be expressed as Fresh air meagre fare freedom from care. Upon the first it is unnecessary theoretically to insist but practically a great deal of insistence is often necessary The low body temperature and subjective chilliness which characterize the aged is all too often made the excuse for stuffy parlours and sealed bedroom windows The inevitable consequence is deficient oxygenation with its resultant decline in metabolic activity It is said that Queen Victoria owed her length of days and her maintained mental vigour to her careful regard for Sir William Jenner s repeated injunctions about fresh air and the open window

In the matter of meagre fare, medical insistence is even more necessary Unfortunately however it is seldom forthcoming The ordinary layman and even more the ordinary laywoman is convinced, with a conviction which nothing can shake that the feebleness of the elderly requires correction by a liberal dietary and the ordinary practitioner either from weariness or tactfulness declines to engage in an unequal combat on this prickly question. When he is courageous enough he will not fail to point out that a feeble body means feeble digestive organs

and that enfeebled digestive organs cannot in the nature of things be expected to deal with a liberal intake. Let him repeat even *ad nauseam*, that man lives by what he digests, and not by what he eats. Meagre in this connection applies as much to quality as to quantity In place of the strong meats which his womankind unceasingly thrust upon him the elderly man should be encouraged to eat vegetables and fruits, especially such as are uncooked It is a popular and as yet an unexploded fallacy which teaches that uncooked foods are difficult of digestion. The exact opposite is the truth. The vitamines though present in abundance in most uncooked foods are nevertheless absent from foods which have been subjected to any cooking process. The exact nature of these principles is unknown but observation and experiment have shown that they are of vital importance both to the very young and the very old. Those with feeble digestions should be encouraged to take such foods as are known to contain them in relatively large quantities. Such are dairy produce—milk, cream butter eggs, cheese uncooked vegetables—lettuce, tomatoes celery endive watercress cucumber and the like and fresh fruit of all kinds For the rest cooked vegetables are better than meat poultry and fish green vegetables are better than root vegetables. The best among the green vegetables is spinach—*le balai des intestins* as the French call it A dietary regulated on these principles will be found to supply

a large sufficiency of nourishment without putting any undue strain upon the endocrine system. Talleyrand described man as *une intelligence contrariée par des organes* The organs to which he referred, though he did not know it were the organs of internal secretion their contrariety arises from their exhaustion by excess of unsuitable food.

Freedom from care is a blessed state to which we all aspire but it is by no means certain that it is good for us when we get it Freedom from petty worries is desirable at all periods of life because energy expended upon unessentials such as trivial domestic troubles leaves so much less for application to essentials but it is not desirable that anyone at any period should be wholly free from such cares as are necessarily incidental to the serious business of his life. No good craftsman finds his work a pastime and it is good for a man, mentally morally and physically to have work to do which he feels under an obligation to do well. This is true at every stage of life but it is more especially true as the years advance There is an old saying that it is better to wear out than to rust out and certainly the best way to avoid rusting out is to work. That a busy and even a harassing life is quite compatible with unimpaired efficiency and length of days is evident from the examples which could be furnished from public men in all countries, and there is little doubt that the maintenance of efficiency into the octogenarian period in these cases has been due to the continued vigorous exercise of the mental faculties

CHAPTER IX.

SOME DRUGS, AND THEIR USES.

IT is told of Sir Astley Cooper who was not only a great surgeon but a wise man, that he was in the habit of warning his students against new remedies. If he said, you are too fond of new remedies two consequences will follow The first will be that you will not cure your patients the second that you will soon have no patients to cure. Much the same idea is expressed in the phrase attributed to a distinguished physician of a later period, to the effect that the dangerous man is he who treats symptoms with new drugs. There is of course nothing inherently wicked in the use of new drugs It may indeed, be affirmed that if no one ever tried them a correct estimate of their respective values would never be formed.

On the other hand it seems to be a fact that an affection for new drugs has a tendency to lead to a neglect of those whose virtues are well established, and as a large proportion, a very large proportion, of new drugs are useless, the man who employs them helps his patients but little. Moreover there are

certain drugs which are so well established that they constitute the standards by which we measure their new competitors and it is obvious that if we are not thoroughly at home with our standards, no useful comparison is possible

It is said that the late Sir Henry Thompson at one of his professional dinners, which were called octaves (eight o clock, eight people, eight dishes and eight wines) placed a card in front of each guest asking him, without consulting with anyone to write thereon the names of the eight drugs he would select if he were in future to be rigidly confined to eight. History does not record the result of this election, but we are given to understand that there was a wonderful similarity in the voting papers.

If the result had ever been published it would almost certainly have shown that old drugs, such as opium and mercury headed the poll, and that new drugs were conspicuous by their absence. I should myself be very sorry to be confined to eight drugs—or to eighteen, for that matter—for the remainder of my career, but if such a calamity were to befall me, of those eight not more than one would be less than twenty five years old. I propose now to refer to some points of practical interest in connection with such of the well known drugs as I am best acquainted with. I do not, of course, pretend to exhaust the applicability of any of them—that is a text-book matter—much less to say anything which has not been said before.

IODIDE OF POTASSIUM.—This is one of the most generally useful of all drugs and the aphorism "When in doubt try iodide of potassium" is a striking tribute to its many-sided therapeutic effects. To explain this many-sidedness is, however, no easy matter. We must, I suppose, grant it a specific effect upon gummata and some other syphilitic lesions, but no such explanation can be made to account for its activities in such widely differing conditions as emphysema, aneurysm, asthma, goutiness, rheumatism, and several others of minor importance. In seeking for a factor in connection with the drug which would throw some light upon the property of ubiquity which, above all others, it seems to possess, one is immediately struck by the fact that a large proportion of the morbid conditions in which it is successfully employed are associated with high blood pressure. This is true of those already mentioned; it is also true of chronic renal disease, of pains, especially where these are nocturnal, and of arterio-sclerosis. For whatever else it is, iodide of potassium is undoubtedly a powerful reducer of blood pressure, and it is to this fact that we may probably attribute not only its merits, but also its drawbacks as a therapeutic agent. I have certainly never given it in asthenic conditions unprotected by nux vomica, or some other drug which tends to raise blood pressure, without causing unpleasant symptoms.

Iodide of potassium is under certain circumstances a great reliever of pain. Pains of all sorts, whether

they be due to syphilis, goutiness, or what not, which are worse at night are almost invariably relieved and generally cured by the exhibition of this drug It is, however in aneurysm that its great value in giving relief from suffering is most manifest. The intolerable agony from which many of those suffer who are the subjects of this condition is more quickly and more lastingly relieved by this, than by any other form of medication. It is necessary to remember that in order to bring about this result the dose must be very large It should begin at 20 grains three times daily and may be increased cautiously to 30 grains. Sufferers from this disease generally show a remarkable tolerance for the drug

In emphysema iodide of potassium is by far the most generally reliable agent. It cannot of course cure the condition but it has a power in relieving the symptoms which is equalled by no other agent which I have employed. Emphysema is to the lungs what chronic interstitial nephritis is to the kidneys. The morbid process at work in the two cases is almost identical, and the effect upon the functions of the respective organs is practically the same. The iodide is much used, and rightly in the treatment of renal cirrhosis, and it has always seemed strange to me that it should be so much neglected in emphysema. In out patient practice I have had more expressions of gratitude from prescribing this drug in this con dition than from anything else.

The number and severity of the attacks of

spasmodic asthma are more readily reduced by iodide of potassium than by any other drug. Asthma is, of course, a symptom and not a disease and it is a symptom of many conditions which may be related to gastric, cardiac, nervous, and other disturbances but whatever the origin, the effect is usually the production of high arterial tension. This being lessened by the drug the symptoms generally yield. Asthma is often spoken of as if it were a condition or tendency which was much influenced by climate This it may be, but it is certainly much more powerfully influenced by diet, and if this factor be carefully regulated in the direction of reducing not only the meat foods but also the whole quantity of food the necessity for drugs of all sorts may easily disappear It has fallen to my lot on more than one occasion to cut short an asthmatic attack by the simple expedient of clearing the gastro-intestinal canal by means of an emetic and an enema. This treatment is not popular with patients who prefer as a rule, to be given soothing and habit-inducing sedatives and narcotics, a preference which ought never to be indulged except, perhaps, in extreme cases, by a hypodermic injection of morphine.

Asthma of gastric origin is very often due to asthenic dyspepsia, in which case HCl and strychnine should be given between the attacks, the iodides being reserved for the treatment of the attacks themselves. A drug which is most valuable in conjunction with HCl and strychnine under these circumstances is

arsenic. It seems to have a special effect in combating that form of gastric irritability which expresses itself in asthmatic ebullitions

℞.	Acid. hydrochlor. dil.	℥xx
	Liq strychnin.	℥v
	Liq. arsenic. hydrochlor	℥iv
	Aquam menth. pip.	ad ℥x.

M. Sig : Ter die ex ℥j. aquæ post cib

In this connection, it is perhaps permissible again to express a warning against giving liq strychnin. with iodide of potassium. The tr nucis vom. is nearly as useful, and there is then no danger of the alkaloid being precipitated. The combination of arsenic and iodide of potassium in asthma is an excellent one

Iodide of potassium is said to be as useful in affections of the aortic valve as digitalis is in affections of the mitral. It is difficult to see whence this saying arose, because the action of the iodide is on the heart as a whole and not on any particular portion of it. The salt affects the heart beneficially by dilating the peripheral vessels, and so lessening its labours. Of these peripheral vessels, the coronary arteries are among the most important. If these were originally constricted and if, in response to the iodide they dilate, an increased amount of blood is permitted to reach the cardiac substance so that the nutrition of the latter is improved. The dilatation has the further effect of inducing a flushing of the waste

products, which are liable to accumulate in the muscle of fatigued hearts, and the action of the iodide itself in helping the solution and elimination of these products is most marked. It is also believed to lessen swelling and induration of the orifices and valves, an action which, having regard to its very marked absorbent powers, one can quite readily believe it to possess.

In the treatment of certain forms of cardiac complaint, where the heart is beginning to flag as the result of its efforts to overcome an increased peripheral resistance, the conjunction of the iodides with digitalis works admirably The dose of digitalis should be small—certainly not more than 5 minims of the tincture to begin with, and preferably less. And it should be remembered, more especially in this connection that in order to reduce blood pressure the dose of the salt should be what is usually considered large—namely 10 grains or more. Small doses, such as 2 grains, tend rather to increase the intravascular tension than to lower it, and may therefore do an infinity of harm in most of the conditions which we have been considering

Iodide of potassium is credited (Ringer) with the power of cutting short a common cold. It is both generally and locally a powerful absorbent, especially where glandular swellings are concerned, and it seems to have a particular power in promoting the absorption of simple swellings of the thyroid gland—simple in the sense of being neither cystic nor accompanied by other evidences of Graves disease.

Iodide of potassium is the best remedy in petit-mal. On this form of epilepsy the bromides have practically no influence. Owing to the automatic acts which are so liable to follow a fit of minor epilepsy—acts of pure animalism, uncontrolled by any higher centre—this type of the malady, though less arresting and alarming is apt to be of much greater social importance than the ordinary type, for those who are not trained to observe generally overlook the small fit, and attribute the subsequent automatic act to pure wilfulness. As many of these acts constitute breaches of the criminal law including even attempted murder it is highly desirable that their cause, the petit-mal, should be recognised and treated. Very large doses of iodide of potassium will often lessen the number and improve the quality of these fits. There is, unfortunately nothing which can be relied upon to bring about their cessation.

Luff[1] has a high opinion of iodide of potassium in the treatment of rheumatoid arthritis. He combines it in a cachet with carbonate of guaiacol, giving of each 10 grains three times daily and insists that the treatment should be continued for at least twelve months. In addition he lays great stress upon hygienic dietetic and climatic details.

Such being some of its principal spheres of usefulness, what are the dangers and inconveniences of its employment? The only danger in connection with it—and it is a serious one—is presented by the fact

[1] *Practitioner* July 1905.

that its administration has been known to cause œdema of the glottis. Elsner and Huchard have both recorded cases of this kind so that it is well to warn a patient to whom we are giving it for the first time to stop the medicine and report himself if any throat discomforts arise. Of inconveniences there are many Perhaps the most pronounced is the occurrence of diarrhœa, either alone or accompanied by vomiting This is not altogether infrequent, because the drug certainly has an irritating effect upon the gastro-intestinal tract, and should therefore be given with caution where this system is deranged.

A form of iodism which has often given rise to unfortunate mistakes is that which causes pain and swelling in the parotid gland, accompanied by other symptoms strongly suggesting mumps. Ignorance of this fact may easily cause a deal of useless trouble and alarm in a household, and if the iodide is not stopped the condition will persist. The commonest forms in which intolerance shows itself are in the production of sore gums, sore throat, running at the eyes and nose, and metallic taste in the mouth These vary much in degree and may generally be checked by the addition of a few drops of Fowler's Solution to each dose. Next in order of frequency come the skin manifestations of iodism. These are numerous—they may indeed take almost any form—but it is well to remember the purpuric form, especially when we are giving the drug to a rheumatic

subject for if we forget it, it would be our duty to confine the patient to bed until some time after all signs of the rash had disappeared. True rheumatic purpura is just as liable to give rise to cardiac complications as acute rheumatism or chorea.

The best way of giving iodide of potassium is in cachet form followed by a draught of water If given in solution over long periods of time, it is well to add small doses of arsenic and nux vomica. The latter seems to prevent the occurrence of the mental and physical depression which some people experience when taking it for long Sarsaparilla, liquorice and syr. pruni virg are said to disguise its taste. According to some writers whose opinions are eminently deserving of attention, the iodide of sodium is more easily tolerated than the potassium salt. Professor Huchard who has great faith in the iodides, insists very much upon this superiority of the sodium salt, which he seems to think is to be preferred on more grounds than one. That iodism in all forms is much less liable to occur with large doses—*e.g* 10 grains—than with the ordinary dose of 2 grains, is a matter of common observation. The late Sir George Macleod was in the habit of teaching that if symptoms of intolerance occurred the right course was to double the dose whatever its original amount.

BROMIDE OF POTASSIUM.—My first object in referring to this valuable salt is to strike a note of warning concerning its use. It does not seem to be sufficiently

known that it has a very deleterious effect upon old people. Even in the ordinary doses of 10 grains three times daily in a person over sixty KBr is very liable to give rise to mental confusion, and if persevered with it may cause permanent impairment of the intellectual powers. The drug produces its effects presumably by lessening the blood-supply to the brain—hence its value in epilepsy—but in elderly people the lessening of this supply may mean thrombosis of some of the vessels, and consequent softening With a drug which presents such possibilities we cannot be too careful, and it is a good thing to make a rule not to prescribe bromides after the age of sixty unless their effects can be very carefully watched.

Another fact in connection with bromides which is worth remembering is that their effect in epilepsy is said to be very much enhanced so that smaller doses produce the desired effect, when the diet is kept free from common salt. This plan, first advocated by Richet and Toulouse in 1899 has proved very successful in the hands of many who have tried it.

In nocturnal epilepsy the action of the bromides is said to be augmented by adding 5 to 10 drops of the tincture of digitalis to the evening dose Bromides being very rapidly eliminated, it is unscientific to give one large dose in the twenty four hours where the attacks are not confined to the night, and even when they are it is better to keep the patient under the influence of the drug during the day

The addition of 3 or 4 drops of Fowler's Solution and 2 of tincture of nux vomica will prevent any unpleasant consequences from taking the salt, even over long periods of time

An enema containing 30 to 40 grains of bromide of potassium is very useful in the vomiting which occasionally follows the prolonged administration of an anæsthetic.

DIGITALIS.—This is a drug which is probably used wrongly more often than it is employed rightly It is used wrongly—that is, harmfully—whenever it is given as a matter of routine on the discovery of a valvular lesion. A well compensated lesion, even at the mitral orifice, not only requires no digitalis it resents it. It resents not only digitalis, but every other form of meddling It cannot be too often repeated that a murmur in itself is no indication for therapeutic intervention, and of itself affords no legitimate excuse for serious prognosis. What we want to know about a heart is its capacity for carrying on the work of the circulation. So long as this is adequate, the noises which it may emit in the performance of its task become a matter of purely academic interest. Digitalis is used wrongly whenever it is exhibited without very special attention being paid to the state of the blood pressure, for digitalis is a powerful raiser of blood pressure and to increase the pressure when it is already unduly high is to court terrible disaster Thus, it should not be given in any stage of arterio-sclerosis, in atheroma, in

granular kidney or in any condition indeed which is characterized by a slow pulse and full arteries It is used wrongly when it is employed as a diuretic where œdema is absent, for its powers as a diuretic are confined to the cases in which this condition is present. It is used wrongly when, in the later stages of heart disease, œdema being present, it is persevered with after it has become evident that no good is to result from its use. Digitalis acts upon the myocardium and on the arteries, and when as in such cases, the muscular tissue of the heart has become largely replaced by fibrous tissue it is impossible for the drug to exercise any cardio-tonic effect, so that its sole action is that of constricting the peripheral arteries, and thereby adding to the burden of the already overtaxed central organ. It is used wrongly when it is given in aneurysm, for in this condition our object is to weaken the ventricular systole not to strengthen it to lower the blood pressure, not to raise it. It is used wrongly when it is given in endocarditis or pericarditis, for in neither condition can it do any good, and, by raising the blood pressure it may easily do a great deal of harm. It is used wrongly when it is employed for the relief of palpitation, unless it is quite certain that this symptom arises from feebleness of the heart itself, and is not caused by obstruction in the systemic periphery The palpitations of dyspepsia, of chlorosis, of nervous affections, and of the abuse of tobacco are all aggravated by the exhibition of the

drug It is used wrongly when by its means an attemp is made to overcome the tachycardia of Graves diseas

The commonest error in connection with th employment of digitalis is its exhibition as a routir procedure whenever the existence of a morbus cord can be established. A valvular lesion, it must b remembered is a mechanical break-down which n line of treatment can hope to cure Nature herse goes as near as is possible to overcoming the difficulty and if by giving digitalis we interfere with he methods, we upset the balance which she ha established, and by our ignorance and officiousnes we provoke the very state of broken compensatio which we are above all things most desirous o avoiding The French teachers are never tired o repeating that 'une lésion d orifice n est pas un maladie du cœur and of insisting that it is no until the heart shows unmistakable signs of breaking down—until, that is, the myocardium fails to contract properly—that cardiac therapeutics come into play Until that occurs the giving of digitalis is mere meddling, and meddling of a peculiarly pernicious kind.

It is said that digitalis should never be given in aortic regurgitation, because by prolonging the diastole it encourages a larger reflux into the ventricle. This view though perfectly sound theoretically requires some modification, not only in view of different effects of the drug according to the dose employed—a question which is considered later—but also because its employment is justifiable

and necessary in aortic regurgitation *of rheumatic origin*, when disaster threatens from progressing weakness of the myocardium. In aortic regurgitation caused by aortitis and other conditions associated with high arterial tension, it is, on account of its constricting effects on the peripheral vessels never justifiable to administer the drug [1]

Digitalis, like mercury is well tolerated by children. It is exceptionally well borne by alcoholics and in febrile conditions it may be given more boldly than under ordinary circumstances. In disordered states of the stomach it should be given with caution, because it has itself a tendency to irritate the gastric mucosa. A great deal has been written about the toxic effects of the drug and while there is no doubt as to its tendency to cumulative action, the dangers thereof are usually much exaggerated. These dangers may be avoided without any risk of lessening the beneficial action of the remedy by suspending it every sixth day for a day or two for the action will continue during the interval

The exhibition of digitalis should always be preceded by a brisk purge some writers even go so far as to say that the ground should be prepared for it by venesection. This is not necessary in the vast majority of cases but the purgative preferably in the form of a blue pill (5 grains) followed by a saline should never be omitted and it may be repeated from time to time with great advantage.

[1] *Vide* Aortic Insufficiency *British Medical Journal* August 4, 1906, p. 277

This refers to cases of ordinary severity In the presence of symptoms of more than ordinary gravity with much œdema great arhythmia, and urgent nocturnal dyspnœa, where the liver is greatly enlarged and the urine very scanty, it is necessary to be much more drastic In such cases it is quite useless to give digitalis until the portal radicles have been freely unloaded for several days in succession, and this must be brought about by what, under ordinary conditions, would be regarded as purgation of quite brutal severity Some writers speak of 10 grains of calomel every night, others of 2 drachms of pulv jalap co three times daily whilst a third set praise a saturated solution of magnes. sulphat. in ½-ounce doses hourly I mention these merely for the purpose of insisting upon the fact that purgation must be very severe and the more urgent the symptoms, the more drastic should it be. A point of great practical importance is that such cases even when apparently at their last gasp bear evacuants surprisingly well, so that one need never hesitate to push the remedy to the point of heroism. Where digitalis fails to act, or where it produces vomiting in the first few doses, it is generally a clear indication that the way has not been sufficiently prepared for it, and the purgation must be continued. During such continuance it is well to prescribe a hypodermic injection of morphine, ¼ grain (not more) every night, and to exhibit liq strychnin. (5 minims) and theobromine (15 grains) three times during the day

Another fact which should not be forgotten in con-

nection with digitalis is that the full benefit of the drug is to be obtained only when the patient is in bed. In slight cases it may and often does, act when he is moving about, but smaller doses will bring about better results and in a shorter time, if the recumbent posture is insisted upon. Another important point to be remembered is that its action whether it be used as a cardiac tonic or as a diuretic is very much enhanced by a pure milk diet Stimulating foods interfere with its action If it is desired to use stimulants which it often is carbonate of ammonia is the best. Alcohol may be necessary but it is usually better avoided.

One of the chief difficulties in connection with the exhibition of digitalis is the unreliability of the ordinary preparations. The amount of active principle present in any given sample of leaves seems to vary more in the case of this drug than in any other with season, soil, and other factors not easy to ascertain. Hence it is that of two samples of say the tincture obtained from different druggists one may be active and satisfactory and the other inert except for the production of vomiting and other unpleasant effects. This is no uncommon experience, so that before deciding that the drug cannot be tolerated it is wise either to change the form in which it is being used, or try the effect of sending the prescription to another chemist. It is often said that the infusion is more trustworthy than the tincture This I believe to be true but only when the infusion is freshly made In France it is very generally held

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that a freshly made *cold* infusion is one of the best means of giving the drug About 8 grains of the powdered leaves are macerated in about 10 ounces of distilled water for twelve hours. The liquid is then filtered to prevent any solid particles obtaining access to the stomach, the amount is divided into 4 or 5 doses, which are taken at intervals during the following twenty four hours. The very unpleasant taste of this infusion may be mitigated by allowing a few slices of lemon to macerate along with the digitalis or by adding the juice of half a lemon to each dose. If for any reason the tincture should prove unsatisfactory an infusion thus made may be appealed to with confidence.

The solid preparations of digitalis are seldom well tolerated under precisely those conditions when the drug is most urgently required and I have long since ceased to employ them. The form in which the drug has, in my hands proved most trustworthy is the preparation of the French Codex called soluté officinel de digitaline cristallisée, of which the dose is 5 to 15 minims. It is quite easily obtained in this country and is infinitely more reliable than any of the ordinary preparations. It was originally suggested by Potain, and its value has been acclaimed by nearly all the French writers since his time. Professor Huchard, who never uses any other preparation, declares that so certain is it in its action, that want of success with it necessarily means want of
ll on the part of the prescriber
i granules or pills of crystallized digitaline

(Nativelle) are useful when the solution cannot be obtained but in common with all the solid preparations they have a greater tendency to upset the stomach than the above mentioned solution

Digitaline should not be administered hypodermically if it can be given with any prospect of success by other means, because even the best preparations are very liable to cause pain at the site of injection which lasts for several days.

In ordinary doses (10 to 30 minims of the B.P tincture) digitalis produces the general effects which we have just been considering It quiets the heart s action, strengthens the systole, and prolongs the diastole. If it regularizes the pulse and slows the beats, it is doing good if it does not produce these effects, it is either useless or harmful.

My own custom however except where symptoms of urgency are present, is to begin with much smaller doses than are usually prescribed. If I see a case where compensation is only just beginning to fail, in which the arhythmia is slight and there are no urgent signs, I prefer to give a dose of 2 minims combined as follows:

℞ Tr digitalis vel Sol. digitaline cristal.
(Codex) ... ♏ii.
Caffeinæ citrat. ... ... gr ii.
Tr nucis vom. ... ... ♏ii.
Aquam ... ... ad ℥
M Sig: Every four hours for a week, then twice

For reasons which appear later I am in f
of ordering with this mixture 1 grain of

be taken four nights a week. This practice I have found admirable in preventing failure of compensation by affording a slight but sustained tonic re-enforcing action. If persevered with (allowing, of course, occasional holidays) it postpones for months, and even years, the dreaded days of asystole and intercurrent disease. If a patient is not ill enough to remain in bed at all costs, then he is not ill enough to be given—at first, at any rate—larger doses of tincture of digitalis than 2 to 5 minims a dose which a considerable experience of out-patients has shown me not only to be highly efficacious, but, even when taken over long periods of time, to be entirely free from danger

MERCURY.—Mercury has been called the sovereign remedy for all evils, and if we include its salts, it surely goes very near to justifying the title The metal itself is the remedy *par excellence* in syphilis, in the earlier stages of which it has what we must assume to be a specific effect. It is also well to remember that in the so-called tertiary manifestations affecting the nervous system mercury will often prove successful when iodide of potassium proves fruitless Of the methods of exhibiting the drug in syphilis nothing can compare with the inunction method as practised at Aix la-Chapelle. A full account of this method and its accessories was given in a paper read by Dr Lieven of Aix la Chapelle before the East Anglian Branch of the British Medical Association in April, 1904 and was published in the *Journal of Balneology and Climatology* in July of that year

Space does not permit me to enter into any detail concerning the method but I should like to point out that it is one which any careful practitioner can carry out, without sending the patient either to Aachen or to any of the numerous health resorts in this country where it can be obtained. It is so superior to any other means of introducing mercury into the system, so full of advantages and so free from risks that I do not hesitate to say that he who neglects it is not doing his best for his patient.

The expression alterative which was applied to mercury by our forefathers must still be employed to denote a quality in the drug which we all recognise but which in the present state of our knowledge we are unable to explain. We know that it is a germicide that it is a cholagogue, that it is an absorbent but we know too, that it is something else which we cannot place in any category It is to that something else that we appeal when we prescribe small doses of gray powder for a bottle-fed baby who though being fed on lines which are quite satisfactory is nevertheless not thriving We may feel certain that there is no syphilitic taint, and yet we place absolute reliance upon the drug to bring about an alteration for the better in the child's nutritive process. It is to that same something which we appeal when we prescribe mercury for a patient who though not ill, yet exhibits undoubted signs of a resisting power which is below the normal level. And the curious thing is that the appeal is so seldom made in vain. They are fond in France of using the terms parasyphilitic and

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sleep to awake in a perfectly calm frame of mind. There is much shrewd practical common-sense in this method, and it might be remembered with great advantage in emergencies similar to those which the author relates.

In minute doses calomel is of the greatest value in typhoid fever It promotes intestinal antisepsis, prevents borborygmi, and renders the stools less offensive I know of nothing to compare with it in the medicinal treatment of this condition (except, perhaps, Dr. Burney Yeo s chlorine mixture) [1] over which it has the great advantage of simplicity and tastelessness. Care should be taken in giving it, however, lest it should accumulate (as it sometimes does) and then exercise the effect of a single large dose. One-eighth grain three times daily is a sufficient dose and this should not be continued for more than three days without an interval. It is usefully combined with *3 grains of thymol made into a pill* with soap powder and a little spirit. If the bowels are thoroughly cleared at the outset by a dose of 2 grains of calomel, and if this pill is given cautiously during the first fortnight, the fever will generally take a benign course. Calomel, in doses of $\frac{1}{16}$ grain hourly until the bowels move freely is a most excellent measure in disordered states in children and in the obscure upsets of adults. In doses of $\frac{1}{4}$ grain before dinner daily for a few days it is useful in mild occasional constipation where brisk purgation is to be avoided.

Another deservedly popular preparation of mercury

[1] Manual of Medical Treatment, second edition vol. ii., p. 636.

is hydrargyrum cum cretâ. It is, as has already been mentioned probably the best alterative for children especially when combined with rhubarb and soda as in the following

℞. Hydrarg. c. cret.	.. ...	gr i.
Pulv rhei	...	gr i.
Sodii bicarb		gr iii.

M. Ft. pulv Sig Nocte maneque.

Dr Murray speaks highly of the following powder in the treatment of catarrhal jaundice

℞. Hydrarg. c. cret.	..	gr i.
Pulv cret.		gr. i. vel grs. ii.

M. Ft. pil. Sig. : Ter die sumend.

In no disease he says are there more fanciful and absurd cures in vogue but they are mostly useless and injurious. The one remedy I have faith in is the administration of gray powder until the gums are touched, and kept so for a month. In order to avoid the difficulty of purgation arising from the use of the ordinary powder Dr. Murray proposes the addition of the extra grain or two of chalk which he has found of signal benefit. In biliary colic Dr Carter speaks highly of the value of succinate of iron (5 to 10 grains) which he and some of his friends have found more efficacious than any other remedy both for the relief of the attacks and the prevention of their recurrence

Mercury and its salts would appear to be the sheet-anchor of dermatological therapeutics Calomel is, according to Ringer infinitely the best remedy in that

very troublesome condition pruritus ani. He prescribes an ointment—calomel 1 drachm to 1 ounce of lard—which he says seldom fails to relieve, and has never in his experience caused symptoms of absorption.

Pruritus pudendi is often quite successfully relieved by the following simple lotion

℞.	Sodii biborat.	ʒi.
	Ol. menth. pip.	ℳv
	Aquam	Oi.
	M. Ft. lotio	

Another successful lotion in all forms of pruritus, especially pruritus ani when complicated with piles, is the following

℞.	Chloretone ..	grs. x.
	Glycerin } S V.R. }	āā ʒiii.
	Lotio carbol. 1 per cent. ..	ad ℥iii.
	Ft. lotio.	

A useful ointment for the same trouble is thus composed

℞.	Chloretone } Ext. conii }	āā ʒi.
	Cremor enthymol ...	ad ʒii.

To this it is often advisable to add grs. viii. of calomel or hydrastin, or both.

A proprietary ointment which I confess to have found most useful in similar conditions is Resinol.

Dr John Reid of New York, recommends pilocarpine in pruritus, whether local or general, whether

there be any obvious lesion of the skin or not, and whether or not the condition is caused by diabetes or other general disease. He recommends that it should be given by the mouth in doses of ½ grain three times daily Combined with 1/10 grain of atropine there is no sweating

Mercurial salts are used in a great number of skin affections. In eczema, especially of the head, a favourite combination is

℞.	Hydrarg. ammon.	grs. x.
	Liq carbonis deterg ...	ℳxx.
	Vaselin vel lanolin	ad ℥i.

M

The yellow oxide is especially valuable in the treatment of pustular eruptions, and if applied early will often succeed in aborting a boil

Inasmuch as the tendency to falling hair more especially in women is stayed by their use mercurial salts would seem to exercise an influence on the nutrition of the hair follicles. A combination which frequently acts remarkably well in this condition is as follows

℞.	Hydrarg perchlor	grs. xii.
	Glycerin	ʒiii.
	Spts. rectif.	ʒiii.
	Olei rosæ	ℳii.
	Aquam	ad ℥vi.

M. Sig.: To be well rubbed into the roots of the hair night and morning.

Or the following

℞.	Hydrarg perchlor	gr. i.
	Acid. carbol. ..	♏viii.
	Ol. ricini	℥i.
	Ol. lavandul.	♏iii.
	Spts. vin. rect.	ad ℥i.

M

When giving such a prescription it is always well to warn the patient that the treatment may seem at first to increase the trouble the reason being that the moribund hairs are removed by the rubbing

'Before leaving the subject of mercury, says Dr Murray let me give one practical hint. If in doubt as to the amount of calomel or grey powder we shall give to a child, lay bare the nates, and if you find them thin, flat, and flaccid give but a small dose. If on the other hand, its little gluteal regions come together like the chubby cheeks of a cherub you need have no fear of a free dose. [1]

ARSENIC —Arsenic was at one time regarded as almost a specific in most chronic cutaneous disorders but experience has since shown that it is liable to be a double-edged weapon, which should be employed with great caution, inasmuch as it has an undoubted tendency to convert a chronic disorder into an acute inflammatory condition. In suitable doses it is a very useful general tonic, and in very small doses (1 to 2 minims of Fowler s Solution) it is an excellent tonic to the digestive organs, more especially the stomach. It is very efficacious in vomiting, especially the morn

[1] *Journal of Balneology* October 1905

ing vomiting of drunkards and those suffering from other forms of chronic irritation. It is probably the most reliable remedy for lienteric diarrhœa in children.

As a general tonic it has a special value in functional affections of the nervous system especially when combined with nux vomica. I have found small doses of both to be more efficacious and better tolerated than large ones a good combination being a pill containing $\frac{1}{60}$ grain of arsenious acid and $\frac{1}{16}$ grain of extract of nux vomica, three times daily after food. This pill should not be given in organic disease of the nervous system because even the small quantity of nux vomica it contains is calculated to do harm.

As a digestive tonic, arsenic acts admirably when combined with citrate of iron and ammonia in those anæmic and chlorotic patients (and they are very numerous) who cannot take the stronger preparations of iron, such as the sulphate and the perchloride. A mistake which is very often made is to give chlorotics and anæmics these stronger preparations in the first instance, a very common and a very futile combination being magnesium sulphate and iron sulphate. It has several times fallen to my lot to see a patient who had failed to make any progress whatever with a prolonged trial of this, improve by leaps and bounds as soon as the following was substituted

℞		
	Ferri ammon. cit.	grs. x.
	Liq bismuth. ammon. cit. ...	ℨi.
	Liq Fowleri	ℳv
	Aquam	ad ℥ss.

M. Sig : Ter in die post cib.

I do not at all underrate the value of purgatives i the treatment of this condition but there is no specia reason for including them in the mixture. They may be given independently in the form of a morning draught, or some other laxative, such as aloes o cascara may be employed. Aloes is said to enhanc the action of iron, and there certainly seems to b good ground for this opinion.

The treatment of chorea by large doses of arseni was invented by an unqualified practitioner who, or his death bed, disclosed the secret of his success t Dr Murray The secret was this '*that Fowler's Solu tion, in 15 to 20 drop doses, might generally be given to children from ten years old upwards for a few days without disturbing the stomach, and that so given it was an almost infallible cure for chorea within a week.* Dr Murray's own observations confirmed the value of the drug so given, but he insists that two rules should be observed The one is that the minimum dose should be 15 drops of Fowler's Solution, and the other that the treatment should not be continued for more than one week.

A trial extending over several years enables me to speak with some assurance as to the efficacy of this method. It does good in the large majority of the cases in some instances it is brilliantly successful, and in a few it fails completely But I do not agree that it is essential that the treatment should be stopped on the eighth day I have indeed, found that to do this, is often to lay down the weapon just as it commences

to be operative that it is, in fact, during the second week of large doses that the symptoms yield. It is, of course necessary to call the parents attention to signs of intolerance during this second week. I have found, further that absolute rest in bed, combined with a diet from which fish, flesh and fowl are rigidly excluded greatly increases the prospect of cure by this, or indeed by any other method. Finally I have found that the addition to the mixture of large doses (say 20 minims to 1 drachm or more) of liquid extract of ergot, as suggested by Dr Eustace Smith,[1] notably increases the percentage of cures.[2]

There are, however some cases which obtain no benefit whatever from arsenic thus given, and although I have endeavoured to classify them, I am unable to suggest any point which, in examining a case would enable us to suspect beforehand that it was one which would prove intractable to arsenic. One very practical clinical point, however is that the cases which fail to respond to arsenic will nearly always (invariably in my experience) react to trional. Trional will fail in a very large number of cases where, under circumstances which are identical as regards rest and diet, arsenic will succeed but I have not yet come across a case where arsenic having been found wanting trional has failed to produce the most satisfactory results.

In dealing with chorea, my custom therefore is first

[1] *British Medical Journal*, July 18, 1903.

[2] *Vide* Ergot and Arsenic in Chorea, by Clive Rivière, *British Medical Journal* February 25 1905.

of all to insist upon the recumbent posture and upon a suitable diet. I then give a mild cathartic and immediately begin the arsenic treatment At the end of a week I am guided by circumstances as to whether the arsenic is to be continued for another week or trional (10 to 15 grains) three or four times a day *substituted* Very few disappointments will, I believe await anyone who follows the same line Arsenic is the most reliable remedy in habit-spasm.

Jonathan Hutchison[1] regards arsenic as a specific in herpes of the lips and genitals—when recurrent. Herpes zoster is often provoked by arsenic, but as in zoster recurrence is very unusual, the drug does not act. It is the element of recurrence which constitutes the indication for its use

In conformity, it is to be presumed with its supposed beneficial effect in all affections of the skin, arsenic is sometimes given by the mouth for the cure of chilblains. There is no objection to this, but I cannot say that I have ever seen much benefit from its use. This troublesome affection is generally best treated by calcium chloride internally (*q v*) combined with local measures The limb should have an extra wrap worn upon it, so as to encourage the circulation of blood in the part. The patient should be warned against subjecting those parts which show a tendency to this form of stasis to sudden alternations of heat and cold, because for some unknown reason, these alternations seem to be much more active in producing

[1] *British Medical Journal*, July 30, 1887

chilblains than cold alone Tight boots and tight gloves must be forbidden. As a local application, nothing can compare with the unguentum iodi (B P) especially when vigorous rubbing is employed It stops the intolerable itching and causes the subsidence of the inflammatory process. For broken chilblains, touching with sulphate of copper and dressing with unguentum resinæ will rapidly effect a cure. For checking the tendency to chilblains—to forestall them that is—iron arsenic and cod liver oil are all useful but calcium chloride is invaluable. Exposure of the parts to radiant heat, as by Dowsing's lamps, will not only assist in checking the tendency it will also bring about absorption of the unsightly swellings which chilblains so frequently occasion Von Buix (*Therap der Gegenwart* January 1906) gives the following as an infallible remedy for chilblains

℞. Calcinat chlorinat (B.P) ... ... ʒi.
Paraffin ... ... ʒix.
M. Ft. ungt. Sig : To be well rubbed in at night.

The effect of calcium chloride taken by the mouth is very much enhanced by the exhibition of parathyroid extract in doses of $\frac{1}{10}$ to $\frac{1}{10}$ grain Another very useful adjunct is nitroglycerine in small doses.

BISMUTH.—In connection with the internal administration of this most excellent gastro-intestinal sedative, most of what is necessary has been said in Chapter II. I revert to the subject here to emphasize one or two points in relation thereto. It was at one time

Formamint present a very convenient and portable method of applying formalin to the oro-pharyngeal region. These tablets are agreeable to the taste, and will therefore be readily sucked by children who cannot be induced to submit to any other kind of effective medication. The tablets are composed of formic aldehyde in combination chiefly with sugar of milk Their internal administration has been recommended in the treatment of flatulent dyspepsia, and it is not difficult to believe that they would do much to prevent fermentation in cases in which the pylorus was obstructed.

Formalin is given internally in two other forms, urotropin and helmitol both of which produce a very decided bacterioidal effect upon the urine Urotropin is produced by the action of ammonia on formalin, and is given in 10 to 15 grain doses. It tends to check ammoniacal decomposition, probably owing to its bactericidal action. This action is very decided and the employment of urotropine has in consequence become almost a routine measure in typhoid fever—not so much for its effect upon the patient as for its power of disinfecting the urine before it leaves the body and thus helping to provide against the spread of the disease Urotropin is also used with great success in the cystitis due to the Bacillus coli communis.

Helmitol is a combination of formalin with citric acid. It is more efficacious than urotropin in certain cases. Urotropin mav [illegible] ys be trusted to disr[illegible]
an acid urine but i[illegible] a urine which is

is liable to be disappointing If the alkalinity is due solely to the presence of bacteria in the bladder then urotropin may be relied upon to check the decomposition but if the alkalinity is due to other causes the effect of urotropin is doubtful. Helmitol, on the other hand will render acid a urine which is alkaline from any cause and will at the same time disinfect it. As a general rule therefore urotropin should be given when the urine is acid, and helmitol when it is alkaline

CHLORIDE OF CALCIUM.—This drug has been shown by A E. Wright to increase very notably the coagulability of the blood and it has in consequence been much and successfully employed in all exudative conditions, more especially of the skin. Chilblains, urticaria, erythema, and purpura, are all much ameliorated by its use and the tendency to the formation of blisters (as from rowing cricket, and the like) is very much lessened during the time the drug is being taken. Savill[1] has extended still further the practical value of the salt by showing that many cases of itching are caused by a species of subcutaneous exudation which disappears under the treatment by calcium chloride and he has effected some very noteworthy cures by exhibiting the drug in cases of pruritus pudendi and pruritus ani which had for years resisted every other form of treatment.

Apart from calcium chloride the best symptomatic remedy for urticaria is magnesium sulphate for erythema, quinine.

[1] *Lancet*, August 1 1896.

a clot of the second type, and not of the first. These facts he applied to the artificial feeding of infants which is liable to present difficulties mainly owing to the formation of indigestible clot as soon as the milk enters the stomach. Oxalates and fluorides being poisonous, Wright tried other precipitants for the calcium salts, and found that citrate of sodium answered all the requirements The practical outcome of this is that if 1 grain of the citrate be added to each ounce of milk, not only may the danger of the formation of clot be entirely disregarded, but there is not, according to Wright, any necessity whatever of diluting cow's milk for infant feeding so as to approximate it to ordinary mother's milk. This last point is very important, and though at first sceptical, many observers have been found to give unqualified adhesion to Wright's views. The addition of citrate of soda is most valuable in insuring digestion of the large quantities of milk which are usually prescribed in the rest cure.

SARSAPARILLA. — This very old remedy has recently been much discussed in connection with tuberculosis and other chronic wasting and debilitating diseases. In the hands of Dr Carter of Liverpool,[1] it has produced most excellent results, and many of those who have been moved by his convincing advocacy to try it speak with enthusiasm of its efficacy The preparation which Dr Carter recommends is the decoctum sarsæ compositum concent.

[1] *Liverpool Medico-Chirurgical Journal*, January 1906.

The doses should be large and frequently repeated—that is, about ½ ounce three or four times daily It is well to be careful of such large doses—at any rate at first—for they not infrequently give rise to gastro-intestinal disturbance If, however small doses are administered at the outset, they may be increased gradually without fear of intolerance. There does not seem to be any explanation as to how this remedy produces its effects, but that it is—in some cases, at any rate—capable of bringing about results which are little short of marvellous there is no longer reason to doubt Sir Felix Semon[1] Sir Clifford Allbutt and others have recently strongly testified to its value in syphilitic cachexia where mercury and iodides are unavailing

EMETINE HYDROCHLORIDE.—Dr Montgomerie Paton of Melbourne in a little book which deserves the careful study of every medical man[2] states that emetine hydrochloride, in doses of ½ grain by hypodermic injection every second day is practically a specific against chronic alcoholism. This treatment, he says will enable every medical man to treat his own patients for alcoholism mostly at *home* and without leaving business. Whilst I cannot go so far as to agree that the drug is a specific, from its outstanding success in a very large proportion of cases I can cordially recommend its trial

[1] *British Medical Journal*, January 18, 1908.
[2] Hormone Therapy Baillière, Tindall and Cox.

CHAPTER X

INSANITY

THE subject of insanity though one which cannot properly be included in any category of minor maladies, is emphatically one of those to the understanding of which the ordinary text-book contributes but little. Some of its practical aspects seem therefore to come within the scope of this volume.

The most important thing to realize in connection with insanity is that it is a symptom and not a disease. We have to divest our minds of the idea that there is some special obscurity in connection with it, an obscurity of a different character from that which still surrounds such conditions as cancer whose ætiology is still unfortunately hidden from us. Mental aberration is in many cases as much a physical condition as leukæmia or pernicious anæmia, inasmuch as it is due to some alteration either of the cortical cells themselves, or of the blood which nourishes them. Our ignorance of the subject and its difficulties, together with the fact that the symptomatology is almost purely mental, have combined to surround this department of clinical medicine

ith an atmosphere of mystery from which it is to
e interest of everyone that it should be emancipated.
he first step towards that emancipation is the
cognition of the fact, which is no longer in doubt,
at the great majority of cases of acquired mental
ienation are due primarily to physical causes, the
scovery of, and differentiation between which are
ecessary to their ultimate removal.

This atmosphere of obscurity has had for its result
e almost complete neglect of the question by him
ho is in a sense the most favourably placed for
udying it in its earlier and therefore its most remedi
ble stages—namely the family doctor It is no dis
aragement to the excellent work done by alienists
say that inasmuch as they seldom see the cases
ntil the malady is pronounced they are less favour
bly situated than others for observing and counter
cting the early symptoms. It is no part of my
urpose to enter into the diagnosis and treatment
f mental diseases rather do I wish to emphasize the
ontion that, ignorance of the accepted classifications
no barrier to the appreciation of the fact that a
eparture from the normal is present in an individual
ase nor need it deter the observer from undertaking
n intelligent clinical investigation into the physical
auses by which this departure has conceivably been
rovoked.

Insanity is still too often regarded as in former
imes all disease was regarded, as a visitation of
Providence, in the presence of which medical inter

ference is not only impotent, but impious. The obscurities of heredity degeneracy, and other difficult social problems, rise up to lend support to this attitude But while the power of such influences is neither to be gainsaid nor minimized, it seems necessary to insist that they are for the most part merely *predisposing causes* which *might* be successfully kept inoperative if the laws of normal development and healthy animal existence were more frequently insisted upon, for purposes both prophy lactic and therapeutic. That a person who shows signs of insanity has had an epileptic father and an alcoholic grandfather is not a sufficient reason for abandoning him to the fate with which he is threatened. It is, however a very good reason for inquiring into his habits and mode of life, for subjecting him to a minute clinical examination—for investigating everything, in fact, which may reveal any disturbance which, though slight in itself, may nevertheless, be sufficiently powerful in the predisposed, reflexly to upset the balance of higher centres.

In other words, we should learn to look upon insanity not as the result of causes which are neces sarily subtle remote, and irremediable but as a state of the nerve cells to the production of which many causes have contributed Some of these the exciting may be and often are recent and remediable and the discovery and removal of these (a matter which is definitely within the sphere of the physician as distinct from the alienist) may well make all the difference between a mere transient

melancholia and a state of matters which urgently demands institutional treatment.

In conducting a clinical examination it is essential to observe a definite routine, and to make careful notes of the findings as the examination proceeds. Necessary as this always is, from the point of view of overlooking nothing where there is any question as to insanity it acquires, as will appear later a very special importance, because of the fulness and accuracy in the matter of detail which are necessary to the filling in of a lunacy certificate.

The system which should first engage the attention of the examiner is, of course, the nervous system and here, to prevent oversights, it is well to adopt a regional method, beginning with the head. After careful inquiries as to memory (especially for recent events) sleep and pain, search should be made for physical signs. Having observed and noted the presence or absence of general facial asymmetry the eyes should engage the most earnest attention Both squint and ptosis are important, and in slight degrees easily overlooked points. The size and equality of the pupils, and their reaction to light and accommodation must be carefully tested in each eye separately

Nystagmus even when present only on extreme lateral deviation, is very significant, and the search for it should on no account be omitted.

The detection of refractive errors especially those which are moderate or slight in degree, is of paramount

importance (*vide* Chapter IV) and if there should be any doubt whatever on this point the question should be referred to a specialist. There is no more fruitful source of grave disturbance of the higher centres than those slight ocular defects which, while not impairing the visual power, nevertheless impose a constant strain upon the ciliary muscle and lead to exhaustion of the nervous system.

The fundus on both sides should be examined for commencing atrophy of the disc, for hæmorrhages or for any other abnormality calculated to throw light upon the patient's condition

Defects of articulation may be evoked by making the patient say difficult words especially those involving the lips and tongue, such as parallelogram, laryngological anæsthetical, preliminary and sentences such as The Irish artillery extinguished the conflagration.

The state of the facial muscles is best ascertained by such directions as Screw up your eyes 'Show me your teeth, Put out your tongue Blow out this light and while these directions are being carried out the examiner should be careful to note the existence of any tremor and should study the relative strength of the contractions on the two sides

Before leaving the face, the state of the mouth must be examined. Oral sepsis is a frequent and well recognised cause of reflex irritation, so that if present in any degree, however slight, great care should be taken to detect and remove it.

In the upper limbs, the force of the grasps on the two sides should be compared. Tremor and involuntary movements are best elicited by making the patient extend both arms together and spread out the fingers of the two hands. He should then be directed to touch the tip of his nose with each forefinger separately the eyes being closed. This will elicit intention tremor and ataxy The condition of the supinator and triceps jerks should be tested.

In the lower limbs any abnormality of gait or pose should be noted, and the muscles should be examined for wasting or rigidity The patient should be made to stand with his heels and toes together and close his eyes. If this which is called Romberg s test, causes swaying or reeling it indicates the presence of static ataxy The knee-jerks must be tested if necessary with what is known as reinforcement—that is by causing the patient to clasp his two hands together and then to make an effort as if to pull them apart. Ankle clonus if present, is very important, because it affords unequivocal evidence of the involvement of the pyramidal system The same may be said of what is known as Babinsky s sign—namely a definite extensor response of the great toe to plantar irritation

The sensibility as to touch, pain and temperature should also be investigated though it must be confessed that this is an ordeal which is apt to be a trying one where we have a stupid, inattentive morose person to deal with.

Such an examination of the nervous system derives its importance from the fact that it will reveal the existence of any physical sign of organic disease which may be present in that system, and as these physical signs afford very valuable *confirmatory evidence of* mental instability their aid in rendering a certificate convincing cannot be overestimated Moreover, the nature of the physical signs when present will enable us to place the mental symptoms in their proper category The discovery of nystagmus and intention tremor for example, will prevent us from attributing to mere hysteria, an emotional instability which is really due to disseminate sclerosis, in the same way that a slight 'perversion of the ego will acquire a peculiarly sinister significance if we find it associated with unequal pupils and a knee jerk which is either absent or exaggerated.

But, although I desire to emphasize the importance of deriving all possible assistance from the examination of the nervous system my present purpose is rather to insist upon the responsibility of derelictions of duty on the part of other systems in bringing about the state of matters which we are considering Dr Graham Crookshank[1] says No case of neurosis, neurasthenia, or borderland insanity should ever be treated without the most careful reference to the condition of eyes, ears, nose mouth heart, lungs, stomach bowels and pelvic organs. The questions of ocular and

[1] The Management of Early Transitory and Ill-defined Mental Disorders, *Clinical Journal*, January 25 1905

nasal defects have already been considered (*vide* Chapter IV) The importance of attention to the state of the mouth has been mentioned above, and may be here reinforced by another quotation from Dr Crookshank Attention to oral hygiene is of vast importance. It is not an exaggeration to say that cases of alcoholic insanity have been cured by the dentist. And not alcoholic insanity only but other forms which are due to absorption of toxins from the mouth, and to digestive disturbances consequent upon deficient mastication.

The responsibility of the intestinal tract for the manufacture and distribution of poisons which cause functional derangements in the central nervous system is now so well recognised that it scarcely needs a reference. Chronic constipation vies even with syphilis and alcohol in the multiplicity of its morbid consequences and their magnitude Among these consequences mental troubles occupy the foremost place and there can be no doubt that if patients in the early stages were adequately purged of their toxins the number who ultimately come to certification would be considerably reduced. Robert Jones[1] very properly deprecates the advice so often otiosely given by the uninstructed, that patients suffering from incipient insanity should travel. Certainly aimless travel is not only useless, but dangerous but travel undertaken with a view of reaching a spa with

[1] How to Treat a Case of Insanity *Lancet* December 26, 1908.

consequences which such a stigma may entail even upon unborn generations. Moreover, institutional treatment is expensive and expense may be a very serious consideration, especially where the patient happens to be the bread winner. On the other hand it is a sad and significant fact that the dislike of an asylum, natural and in a sense laudable, though it be, is responsible for many cases reaching the incurable stage which might have been cured had they been subjected to expert treatment in the first instance. The treatment of insanity *is* a very special matter, and general practitioners would be well advised if they refused to undertake it unaided, unless they felt very sure that the particular case was well within their competence. If home treatment is strongly desired by the relatives of the patient, the best course to pursue is to refer the whole question to an experienced alienist, under whose advice the practitioner may carry out the home treatment, should this be decided upon. Unless he has had special experience, the family doctor should make it a rule to refer the question of the treatment of all cases of insanity to an expert, in the same way and for the same excellent reason that he habitually refers all cases requiring abdominal section to a practising surgeon. The cases suitable for home treatment are given by Robert Jones[1] as follows 'Forms of insanity referred to malnutrition, such as those caused by excessive lactation, or the conditions accompanying

[1] *Lancet*, December 26, 1908.

the puerperal state transient toxæmic states, such as those due to drink or drugs, and the temporary insanities of young persons quiet and harmless weak minded cases and certain cases of general paralysis in the last stage whose friends are desirous of avoiding the much felt stigma when a father or husband is said to have died in an asylum.

When no doubt exists that a person is sufficiently insane to demand or warrant his removal from home the proper course to pursue depends upon whether that person is a private patient or a pauper whether in fact, he is sufficiently well off to contribute something towards his keep in an institution, or whether removed from his means of livelihood, he is penniless.

In the case of a pauper notice of the fact and circumstances should at once be given to two functionaries—namely the parish doctor and the relieving officer No harm is done by notifying yet a third—namely the head of the police in the immediate district. As soon as these officials have received proper intimation the responsibility of the ordinary medical man is at an end except that he may be called upon by the magistrate to furnish particulars. These functionaries are bound by Act of Parliament to take the necessary steps within three days of receiving the notice.

In the case of a private patient, there are two methods of procedure (1) An urgency order and (2) an ordinary petition with statement, two medical certificates and a justice s order.

There is now no fear of any difficulty arising if only the certifier will take ordinary care. The Act of 1890 protects him fully, even abundantly if he will realize what his responsibilities are in connection with the making out and the signing of the certificate. First, then, the certificate should be drawn up with the feeling that it is a document upon which the certifier may conceivably, at some distant date be cross examined in open court. Although, as has just been pointed out, there is no serious danger of this, yet it is always well to be provided against every possibility and *if every certificate were drawn up with the* spectre of a cross-examining counsel at the writer's elbow it is very certain that not a single case would ever come into court.

It is not sufficiently appreciated that if any proceedings are taken against a person for signing a lunacy certificate such proceedings may be stayed upon summary application to the High Court, or to a judge thereof, if the court or judge is satisfied that there is no reasonable ground for alleging want of good faith or reasonable care (Lunacy Act, 1890 Section 330 subsection)

This subsection represents the medical practitioner's Magna Charta in matters relating to the certification of the insane. Section 330 protects him from losing an action if he has acted in good faith and with reasonable care, but it does not prevent proceedings being instituted The subsection goes further and provides means for stopping an action if there is no

ground for alleging want of good faith and reasonable care

Now, in order successfully to invoke the aid of this subsection, the certificate must be so framed as to impress the judge that extreme care has been taken in every detail. Medical men are in the habit of inditing a lunacy certificate much in the same spirit as that in which they indite a certificate for a club stating the inability of one of its members to follow his ordinary employment. It should be remembered however that there is an essential difference between a lunacy certificate and any other medical certificate. This difference resides in the fact that whereas in the latter the doctor's opinion as an expert is accepted in the lunacy certificate it is not. It suffices for a qualified man to write In my opinion this person is suffering from pneumonia, but it does not suffice for him to write In my opinion this person is suffering from insanity The club authorities unhesitatingly accept the one the Lunacy Commissioners peremptorily reject the other Successfully to frame a lunacy certificate it is necessary to include facts—not deductions but facts—which will carry conviction of the patient s insanity to a person, or a set of persons, who have never seen the patient.

Extreme care and due elaboration of detail are thus essential not only to the validity of the certificate but also to that immunity from vexatious legal proceedings which the Act of 1890 seeks to confer on the conscientious certifier For the certificate must

educated man, who has brought to its composition the desire succinctly to convey positive information to responsible people who have no other means of forming a conclusion upon a matter of the highest importance.

It is scarcely necessary to add that, after efficiency brevity is one of the most valued attributes of a lunacy certificate. These documents have not only to be perused by several people, but they have usually to be copied many times over Nevertheless desirable as it is brevity should not be attained at the expense of adequacy, nor should it be sought for outside the rules of ordinary syntax.

Before a lunacy certificate is sent in the certifier should read it critically, and ask himself two questions concerning it. The first is Will this convince a person who has never seen the patient that the latter is insane? The second is 'Will this convince a judge of the High Court that I have used every possible care, both in examining the patient and in drawing up the certificate?' If it is possible for a negative reply to be given to either of these questions, then the document must be redrafted even though this should entail a second interview with the patient. It is only by constituting himself his own severest critic that the certifier can hope to satisfy others.

The two medical men who certify a patient to be insane must act separately and apart. They must not visit the patient together and each certificate

must be made out independently of the other When the certificates are complete they together with the petition and statement, must be ratified by a justice's order The justice may be a County Court judge, a stipendiary magistrate, or a magistrate *specially appointed.* The signature of an ordinary justice of the peace has only temporary value because an order so signed must, within fourteen days of its date, be approved and countersigned by a justice specially appointed. It therefore saves a great deal of trouble to obtain the signature of a specially appointed magistrate or other qualified functionary in the first instance.

Briefly to recapitulate the procedure in the case of a private patient for whom institutional treatment has been decided upon is as follows

1. Communicate with the authorities of the selected institution as to the reception of the patient, and if necessary obtain from them the forms for petition and certificates.

2. As soon as these forms are to hand, see that the petition and statement are duly and accurately filled in by the nearest available relative.

3 Arrange with another medical man (not a partner or assistant) separately to examine the patient and draw up his certificate.

4 Examine the patient and certify

5 The petition and statement, together with the two medical certificates, being complete the reception

order (the printed form for which is always supplied with the certificates) must be signed by a County Court judge, or a stipendiary magistrate or a justice of the peace specially appointed. [This official may or may not wish to see the patient before signing the order.]

6. The *necessary documents being* thus complete, they are to be taken, within seven days of their completion, by the person who accompanies the patient to the institution and handed by him to the manager whose authority they constitute for detaining the patient. Copies of these documents are forwarded by the manager to the Commissioners in Lunacy.

INDEX

NOTE.—Readers will frequently find repeated references on a page to various of the indexed terms.

A continued or connected reference from page to page is usually indexed only for the first page.

INDEX.

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